FIELDCONTROLS
COMMERCIAL

# COMMERCIAL PRODUCTS GUIDE

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FIELDCONTROLS

Field Controls is a leading manufacturer if air quality solutions, offering innovative products that enhance indoor air quality, ventilation, and comfort. With over 95 years of experience, Field Controls specialize in UV technology, filtration systems, and ventilation products designed to provide healthier and safer environments in residential, commercial, and industrial settings. Our commitment to quality, innovation, and customer satisfaction has made us a trusted partner in the HVAC industry. Field Controls continually invests in research and development to bring cutting-edge technologies to the market, ensuring our products remain at the forefront of air quality solutions. With a focus on sustainability and efficiency, we help our customers achieve cleaner, more energy-efficient indoor environments.





## AIR QUALITY ANALYSIS
REAL-TIME MONITORING


## COIL CLEANING
PREVENTS TOXIC BIOFILM


## AIR DISINFECTION
REDUCES BACTERIA, VIRUSES, & MOLD

## AIR PURIFICATION
TRAPS PARTICLES
REDUCES GERMS & BACTERIA
REDUCES ODORS & VOCS

## PORTABLE AIR PURIFIERS
TRAPS PARTICLES
REDUCES GERMS & BACTERIA
REDUCES ODORS & VOCS

# IAQ

## WHAT YOU DON'T SEE




### FACTS ABOUT INDOOR AIR QUALITY

We may not see it, but the air we breathe has a profound impact on our health and well-being. Understanding the importance of indoor air quality (IAQ) is essential for creating a healthier environment. Here are some key facts about IAQ.

### THE BASICS OF INDOOR AIR QUALITY

We breathe about 3,400 gallons of air daily, yet indoor air can be 2 to 100 times more polluted than outdoor air, posing serious risks to respiratory, cardiovascular, and immune health.

### HEALTH IMPACTS OF POOR AIR QUALITY

Particulate matter (PM2.5) increases risks of cardiovascular and respiratory diseases. Poor IAQ triggers asthma in over 25 million Americans and worsens allergies for 60% of sufferers. Common sources include cleaning products, pet dander, dust mites, and mold. Improving IAQ is vital for better health and quality of life.

### GLOBAL AND LONG-TERM CONSEQUENCES

Harmful air quality causes 3.8 million deaths annually (WHO). Prolonged exposure to VOCs from household products like paints and cleaners increases risks of cancer and organ damage. Addressing air quality is essential to protect public health.

### IMPACT ON CHILDREN'S DEVELOPMENT

Poor indoor air quality (IAQ) affects children's development, impairing brain function, memory, and concentration. Prolonged exposure to pollutants like particulate matter and VOCs can lead to learning difficulties, lower academic performance, and developmental delays. Addressing IAQ is vital for their health and future success.

## THE IMPORTANCE OF INDOOR AIR QUALITY

Indoor air quality (IAQ) affects health, productivity, and sustainability. Here's why it matters:

- **Health Impact:** Poor indoor air quality can lead to respiratory issues, allergies, asthma, and other health problems, while good IAQ supports overall well-being.
- **Productivity:** Clean air improves concentration, cognitive performance, and productivity in workplaces and educational settings.
- **Comfort:** Proper IAQ reduces odors, humidity issues, and temperature fluctuations, enhancing indoor comfort
- **Allergen Reduction:** Effective air filtration reduces allergens like pollen, dust mites, and pet dander, improving quality of life for allergy sufferers.
- **Energy Efficiency:** Advanced systems optimize airflow, lower energy use, and cut utility costs.
- **Environmental Impact:** IAQ solutions reduce emissions and conserve energy, promoting sustainability.
- **Indoor Pollution Sources:** Common sources include cooking, cleaning products, tobacco, and off-gassing from materials.
- **Disease Prevention:** Reduces the spread of airborne pathogens, including bacteria and viruses, particularly in high-occupant spaces.
- **Regulatory Compliance:** Adhering to EPA and WHO standards ensures safer indoor spaces and regulatory alignment.

**REMOVE DUST AND ALLERGENS** | **REDUCE RESPIRATORY IRRITANTS** | **ELIMINATE MOLD SPORE BUILD UP** | **REMOVE POLLEN AND AIRBORNE INFECTIONS** | **FILTER OUT HAIR, FIBER & OTHER DEBRIS** | **ELIMINATE PET DANDER**

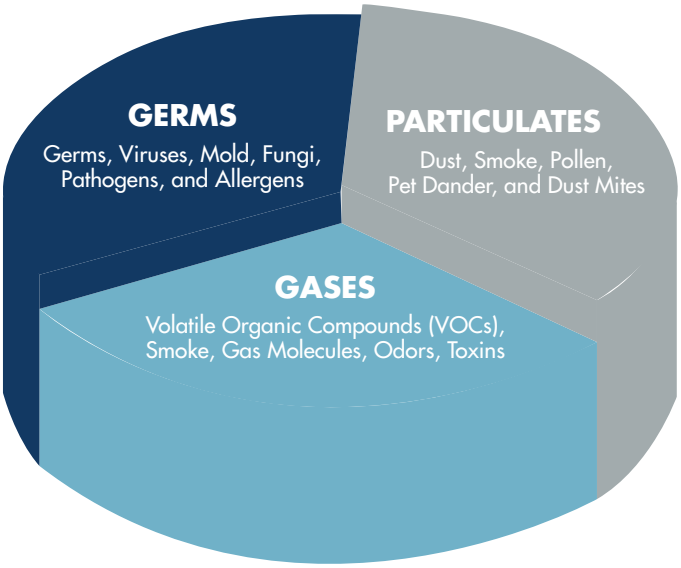
## THE BENEFITS OF AIR IMPROVEMENT

Improving IAQ can reduce respiratory illnesses by 20% (EPA). Cleaner air minimizes exposure to pollutants like dust, mold, VOCs, and PM2.5, which contribute to asthma, bronchitis, and COPD. Steps such as better ventilation, air purifiers, and humidity control create healthier, more productive environments.

## THE IMPORTANCE OF INDOOR AIR QUALITY

- **Promotes Healthier Breathing:** Reduces airborne irritants, making indoor air fresh, clean, and pure
- **Reduces Airborne Pathogens:** Diminishes the spread of germs, bacteria, and viruses, creating a healthier environment
- **Enhances Air Freshness:** Reduces pollutants and odors for a noticeably cleaner and more pleasant indoor atmosphere
- **Support System Longevity:** Keeps HVAC systems running efficiently by reducing dust and contaminant buildup
- **Improves Overall Comfort:** Provides cleaner air that enhances the living and working experience for all occupants
- **Decreases Environmental Toxins:** Captures VOCs and hazardous particles, improving air quality and reducing health risks
- **Boosts Workplace Efficiency:** Clean air contributes to better focus, reduced sick days, and higher productivity in workplaces
- **Easy Integration:** Modern designed and advanced filters fit seamlessly into existing systems for hassle-free implementation

# THREE RESPIRATORY TRIGGERS




According to the U.S. Centers for Disease Control and Prevention (CDC), indoor air quality is impacted by three primary types of pollutants: Germs, Particulates, and Gases. These pollutants can significantly affect respiratory health, often triggering allergic reactions and other health concerns.

Maintaining healthy indoor air quality requires a comprehensive approach that includes filtration, ventilation, and air purification technologies. By addressing these key pollutants, it is possible to create a cleaner, safer, and more comfortable indoor environment, reducing health risks and improving overall well-being.

## INDOOR AIR POLLUTION AND ALLERGIC REACTIONS

Polluted indoor air is a leading cause of allergic reactions, which can manifest as sneezing, congestion, itchy eyes, skin irritation, and respiratory distress. Studies indicate that allergic reactions stem from various indoor air pollutants in nearly equal proportions:

- 35% of allergic reactions are caused by Particulates such as dust, pollen, and pet dander.
- 31% of allergic reactions are triggered by VOCs (volatile organic compounds) emitted by household products.
- 34% of allergic reactions result from exposure to Germs, including bacteria, viruses, and mold spores.

Given that indoor air pollution is a major contributor to allergic reactions and respiratory illnesses, improving air quality through filtration, ventilation, and air purification technologies is essential for maintaining a healthier indoor environment.

# THREE SOLUTIONS


## FILTRATION

Traps Particles


## PCO

Reduce odors and
VOC gases


## UV

Reduces Germs

### AIR PURIFICATION ADDRESSES RESPIRATORY TRIGGERS

- **Germs**: Bacteria, viruses, and mold spores can trigger respiratory issues. UV light technology air systems targets and reduces these germs, helping prevent airborne illnesses.
- **Particulates:** Dust, pollen, and pet dander aggravate allergies. High-efficiency filters capture these particles, improving air quality for sensitive individuals.
- **Gases:** VOC's and gaseous pollutants irritate the respiratory system. Activated carbon filters absorb these gases, improving air quality and reducing odors for a cleaner, breathable indoor environment.

# IAQ STRATEGY

## LAYERED APPROACH

### THREE STRATEGIES FOR BETTER INDOOR AIR QUALITY

Following the three main trusted authorities and experts, their guidelines can be distilled into three basic strategies to improve indoor air quality:

### 1. SOURCE CONTROL - MOISTURE & LEAKS

The most effective way to improve indoor air quality is typically to eliminate the sources of pollution or reduce their emissions. This involves removing materials and products that release harmful gases or particles, such as new paint, cleaning chemicals, gas stoves, or asbestos. While source control is often the most cost-effective approach, its effectiveness can be limited. For this reason, additional measures, such as improved ventilation and the use of air cleaners, are necessary to achieve comprehensive air quality improvements.



### 2. IMPROVE VENTILATION - DILUTE CONCENTRATION OF CONTAMINANTS

The second strategy for reducing indoor air pollutant concentrations is to increase the flow of fresh outdoor air into space, which helps dilute contaminants. This can be achieved through two primary methods: natural ventilation, such as opening windows and doors, and mechanical building ventilation systems designed to bring in and circulate fresh air effectively.

### 3. AIR TREATMENT - AIR PURIFIERS & CLEANERS

Air cleaners are a vital component of improving indoor air quality, and they can be applied in two primary ways:

#### In-Duct Air Cleaners

In-duct air cleaners, integrated into HVAC systems, filter pollutants before air is recirculated, ensuring consistent treatment throughout the building.

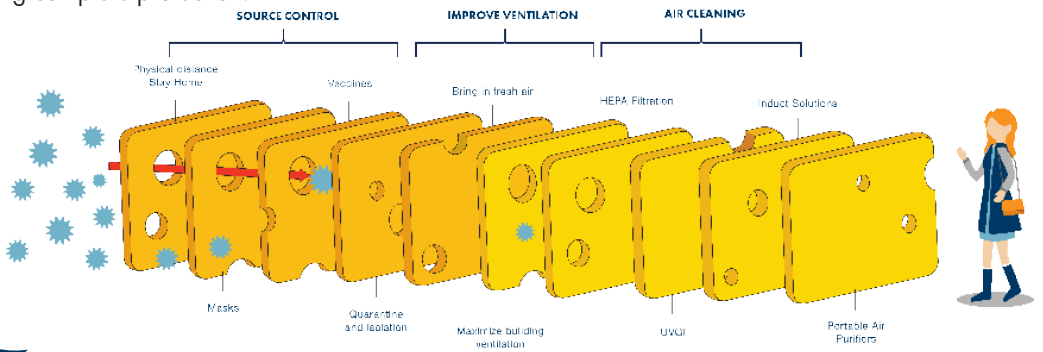
- Recommended Filtration: Use filters with a MERV rating of 13 or higher for effective air quality improvement (EPA, CDC, ASHRAE).
- MERV Ratings: Higher ratings capture more particles like dust, pollen, mold, and some bacteria and viruses, promoting healthier indoor air.

#### Portable Air Purifiers

Portable air cleaners purify air in specific areas, ideal for spaces without centralized ventilation. With HEPA filters or activated carbon, they reduce particles, allergens, and odors, enhancing air quality in high-traffic or high-risk zones. Combining in-duct and portable cleaners offers a comprehensive air purification strategy.

### MULTIPLE LAYERS TO REDUCE TRANSMISSIONS

The Swiss Cheese Respiratory Virus Defense recognizes that when it comes to the spread of viruses, no single intervention is perfect at ensuring complete protection.

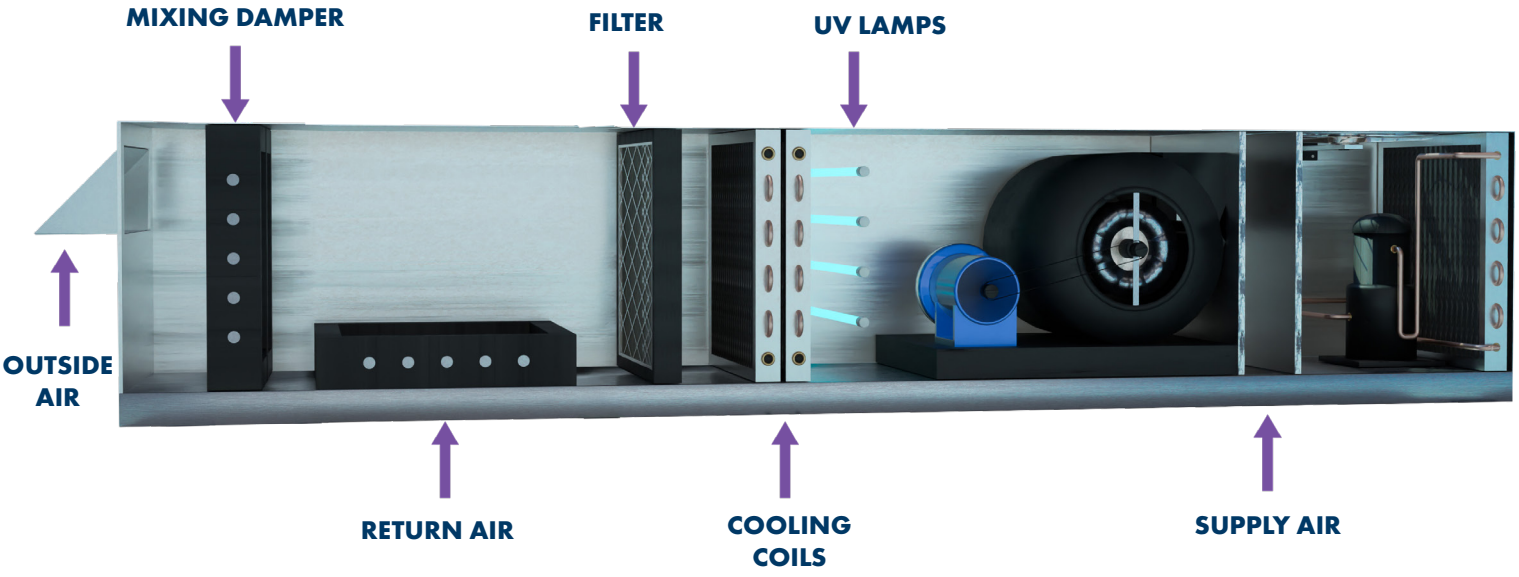





FIELDCONTROLS

# IAQ STRATEGY

## LAYERED APPROACH






## BUILDING VENTILATION

Optimizing ventilation improves air quality by increasing outdoor airflow and reducing pollutants. However, challenges include:

- Costly Upgrades: Many HVAC systems aren't designed for MERV 13+ filters, requiring expensive modifications.
- Higher Energy Use: Enhanced ventilation raises energy demand and utility bills.
- Increased Maintenance: High-rated filters are pricier, need frequent replacement, and strain equipment, leading to wear and tear.

Balancing these factors is crucial for sustainable IAQ improvements.

## BUILDING VENTILATION

Mechanical ventilation is essential in a layered IAQ strategy, providing controlled consistent airflow to remove indoor pollutants and bring in fresh air. Unlike natural ventilation, mechanical systems ensure continuous air exchange, regardless of weather conditions or building design, making them a reliable solution for maintaining healthy indoor environments.

### How Mechanical Ventilation Enhances IAQ

- Delivers Fresh Air on Demand: Ensures a steady supply of filtered outdoor air while expelling stale, contaminated air.
- Controls Humidity & Moisture: Prevents mold growth and enhances comfort by managing indoor humidity levels.
- Reduces Pollutants: Minimizes airborne contaminants, including allergens, VOCs, and pathogens, for healthier indoor space.
- Improves Energy Efficiency: Works with Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs) to optimize air exchange while reducing heating and cooling loads.

Integrating mechanical ventilation with natural ventilation, air filtration, and purification creates a comprehensive IAQ strategy, ensuring clean, healthy air for homes, businesses, and commercial spaces.

# TECHNOLOGY

## FILTRATION

### HIGH-EFFICIENCY FILTRATION

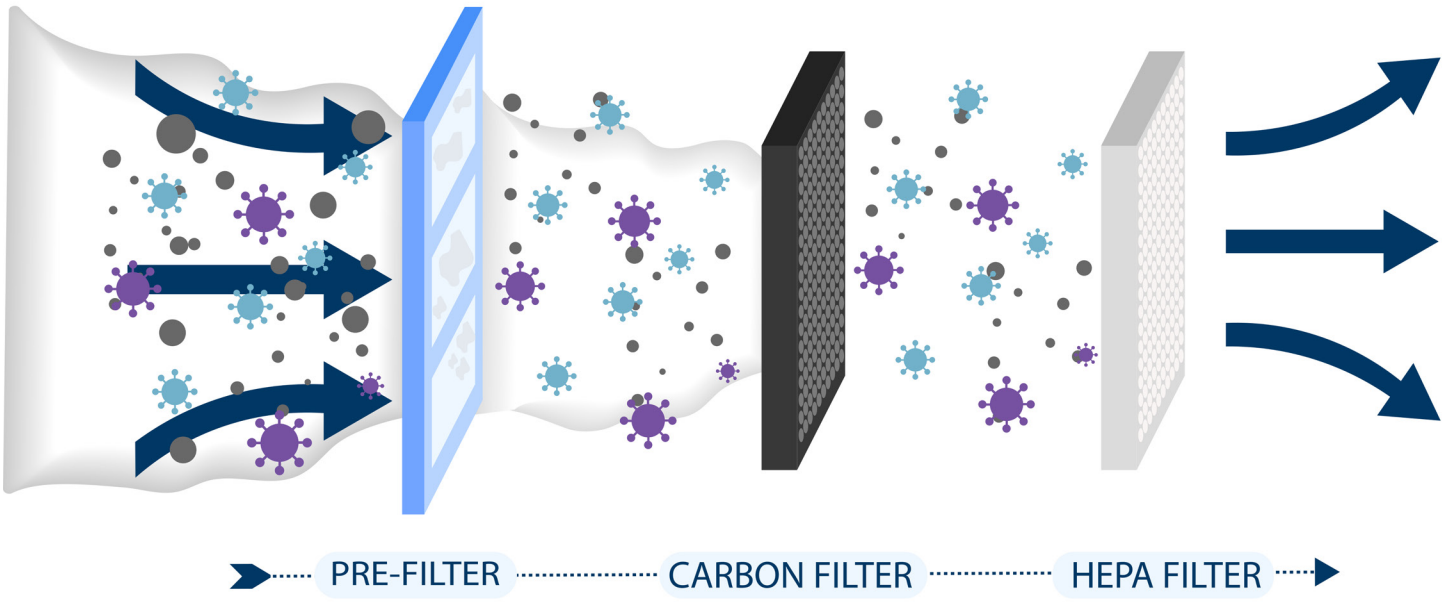
Field Controls utilizes cutting-edge filtration technology to effectively remove airborne particulates, including dust, pollen, pet dander, and fine particles such as PM 2.5. Our high-performance MERV-rated and HEPA filters are engineered to capture even the smallest contaminants, significantly improving indoor air quality.

By targeting allergens, pollutants, and other airborne irritants that can exacerbate respiratory conditions, our filtration systems create a healthier living and working environment. Whether used in residential, commercial, or industrial applications, these filters provide clean, breathable air, supporting overall well-being and comfort for occupants.

### ADVANCED PM2.5 FILTRATION FOR SUPERIOR INDOOR AIR QUALITY

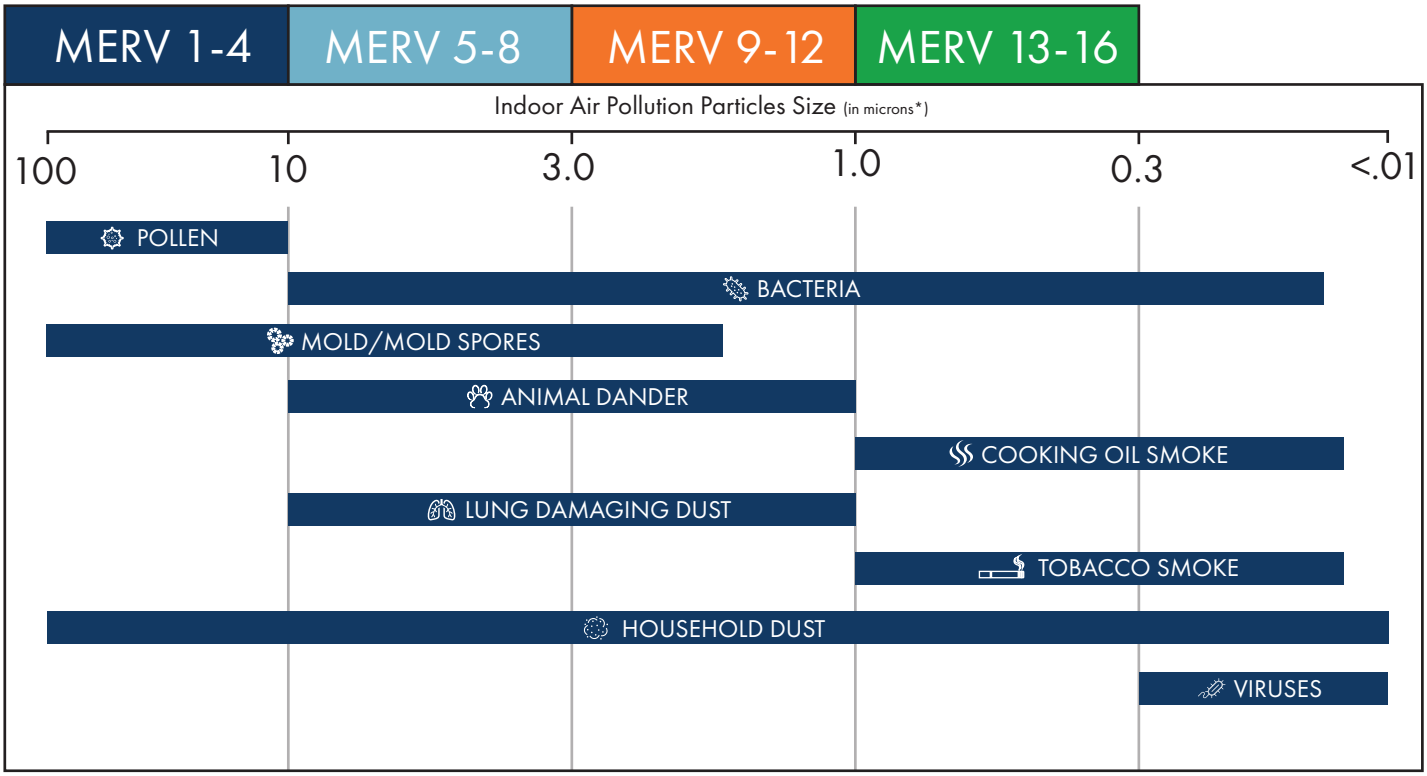
Our system effectively removes particulate matter PM 2.5, capturing fine airborne particles as small as 2.5 micrometers. These microscopic pollutants including dust, smoke, pollen, and other harmful contaminants can impact respiratory health. By significantly reducing PM 2.5 levels, this advanced filtration technology enhances indoor air quality, creating a cleaner and healthier environment for occupants.





## KEY BENEFITS OF AIR FILTRATION

- **Consistent Air Quality:** Delivers clean air throughout the environment
- **Comprehensive Contaminant Removal:** Captures a wide variety of pollutants
- **Healthier Environment:** Reduce allergens and airborne irritants, leading to fewer respiratory problems
- **Odor Reduction:** Helps eliminate unpleasant odors caused by pets, cooking, and more
- **Increased HVAC Efficiency:** Keeps your heating and cooling system cleaner, improving its efficiency and lifespan




## REMOVAL EFFICIENCY (BASED ON PARTICLE SIZE)

| | 0.3 - 1.0 MICRONS | 1.0 - 3.0 MICRONS | 3.0 - 10.0 MICRONS |
|---|---|---|---|
| MERV 8 | <20% | <20% | 70% - 85% |
| MERV 11 | <20% | 65% - 79% | >85% |
| MERV 13 | <75% | >90% | >90% |

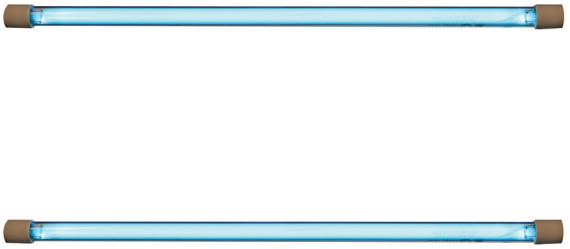
# TECHNOLOGY

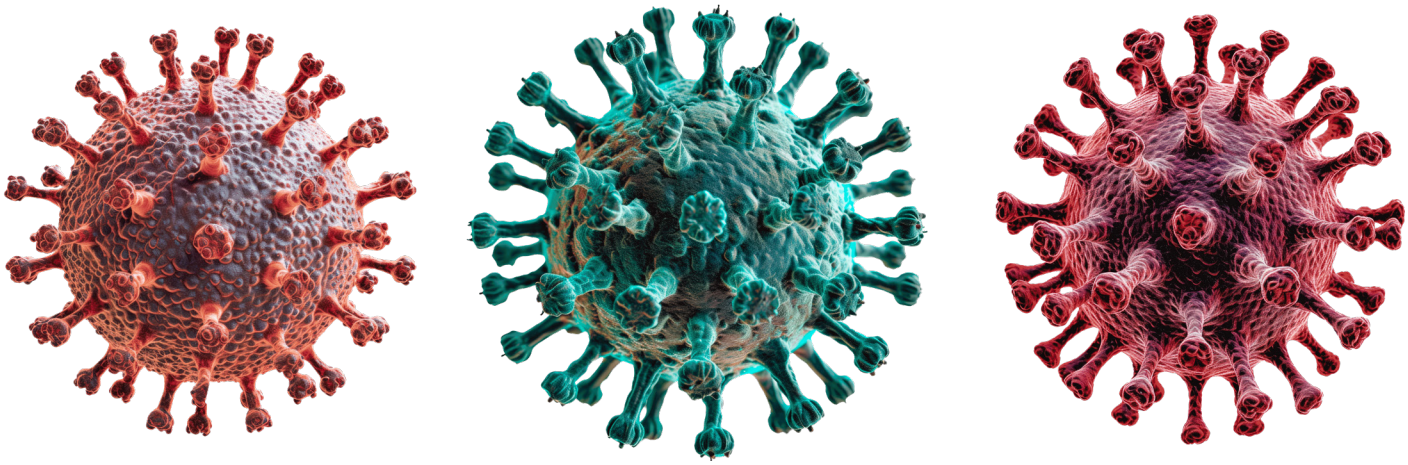
## UV

### UVC LIGHT FOR GERM REDUCTION

Ultraviolet-C (UVC) light is a scientifically proven solution for reducing harmful microorganisms, including bacteria, viruses, and mold spores. By disrupting their DNA structure, UVC light effectively neutralizes these pathogens, preventing them from reproducing and spreading.

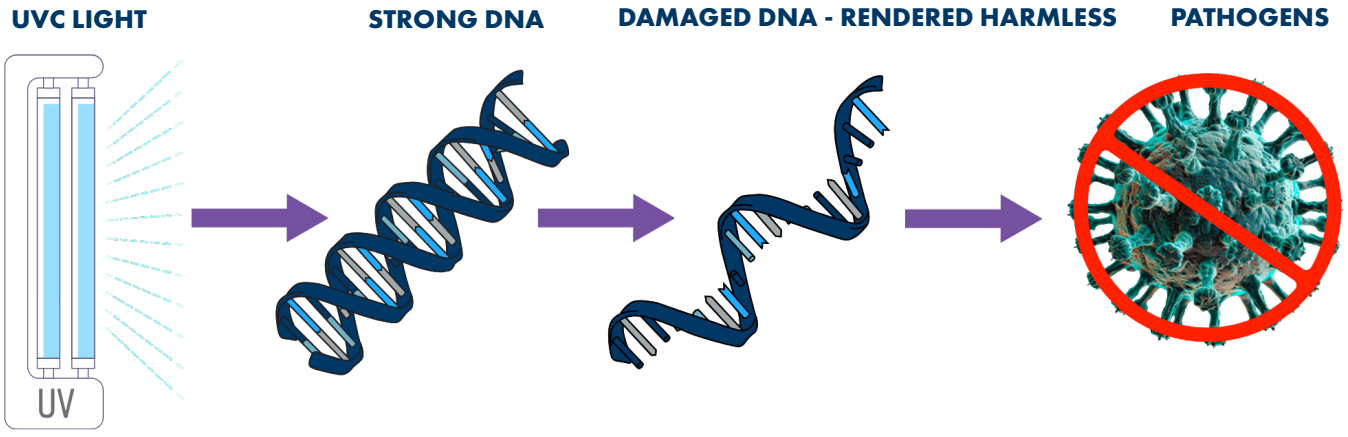
Designed for integration into HVAC systems or standalone air purification units, UVC technology delivers continuous air and surface disinfection. This advanced sterilization method helps minimize the risk of airborne illnesses, enhances indoor air quality, and creates a safer, healthier environment for homes, offices, healthcare facilities, and commercial spaces.





### HOW UV DISINFECTION WORKS

UVC light effectively neutralizes harmful microorganisms like bacteria, viruses, and mold by disrupting their DNA or RNA, preventing reproduction and infection. Widely used in HVAC systems, air purifiers, and water treatment, it offers a chemical-free, efficient, and eco-friendly way to improve indoor air quality and reduce illness.



## REDUCE AIRBORNE MICROORGANISMS FOR A HEALTHIER ENVIRONMENT

Air purification systems equipped with advanced filtration and UV technology effectively reduce airborne microorganism, such as bacteria, viruses, and mold spores. As air passes through the system, harmful pathogens are neutralized, significantly lowering the concentration of these contaminants in the air. This continuous disinfection process helps create a healthier indoor environment, reducing the risk of airborne illnesses and prompting better overall air quality.

## HARNESS THE POWER OF UV LIGHT FOR SUPERIOR AIRBORNE GERM PROTECTION

UV light technology offers powerful benefits for reducing airborne microorganisms. By emitting germicidal UVC rays, it effectively neutralizes harmful bacteria, viruses, and mold spores, preventing them from circulating in the air. This technology works continuously to disinfect the air, reducing the risk of respiratory infections and improving overall indoor air quality. UV light provides a chemical-free, energy-efficient solution, ensuring a safer, healthier environment with minimal maintenance.

## THE POWER OF UV IN HVAC SYSTEMS

HVAC filters are designed to capture particles but not to destroy the DNA of microorganisms. Once trapped, these microorganisms can grow and thrive on the filter material. UV technology stands out as the most effective method for destroying bacteria, viruses, and mold, which can significantly impact indoor air quality.



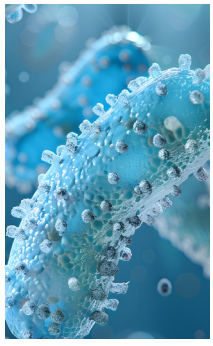
## DOSE = INTENSITY TIME

UV dose, often expressed in $mJ/cm^3$, $J/m^2$, or $\mu Ws/cm^2$ represents the total amount of UV intensity delivered over a period of time. UV intensity measures the UV energy applied to a given surface and follows the inverse square law, meaning it decreases as the distance from the UV source increases.

**UV Dose ($mJ/cm^2$) = UV intensity ($\mu Ws/cm^2$) x Exposure Time(s)**

## ENSURING THE RIGHT UV DOSE FOR EACH APPLICATION

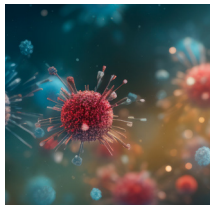
The dose required to reduce biological microorganisms is well documented. The challenge lies in ensuring that the targeted organism received sufficient UV exposure within the available space and time.

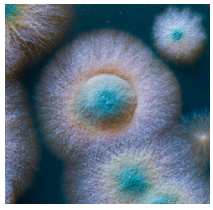


### ORGANISM

**UV Dose in Micro-watt sec/$cm^2$ for 99% kill factor**

| | |
|---|---|
| **Bacteria** | 99% |
| Bacillus anthracis spores | 46,200 |
| Escherichia coli | 6,600 |
| Legionella pneumophila | 12,300 |
| Mycobacterium tuberculosis | 10,000 |
| Staphylococcus aureus | 6,458 |
| Pseudomonas aeruginosa | 3,597 |





### ORGANISM

**UV Dose in Micro-watt sec/$cm^2$ for 99% kill factor**

| | |
|---|---|
| **Virus** | 99% |
| Influenza A | 46,200 |
| Coronavirus (including MERS) | 6,600 |
| **Mold** | 99% |
| Aspergillus flavus | 46,200 |
| Aspergillus niger | 6,600 |

# TECHNOLOGY

## PHOTOCATALYTIC OXIDATION

### AIR PURIFICATION FOR A HEALTHIER ENVIRONMENT

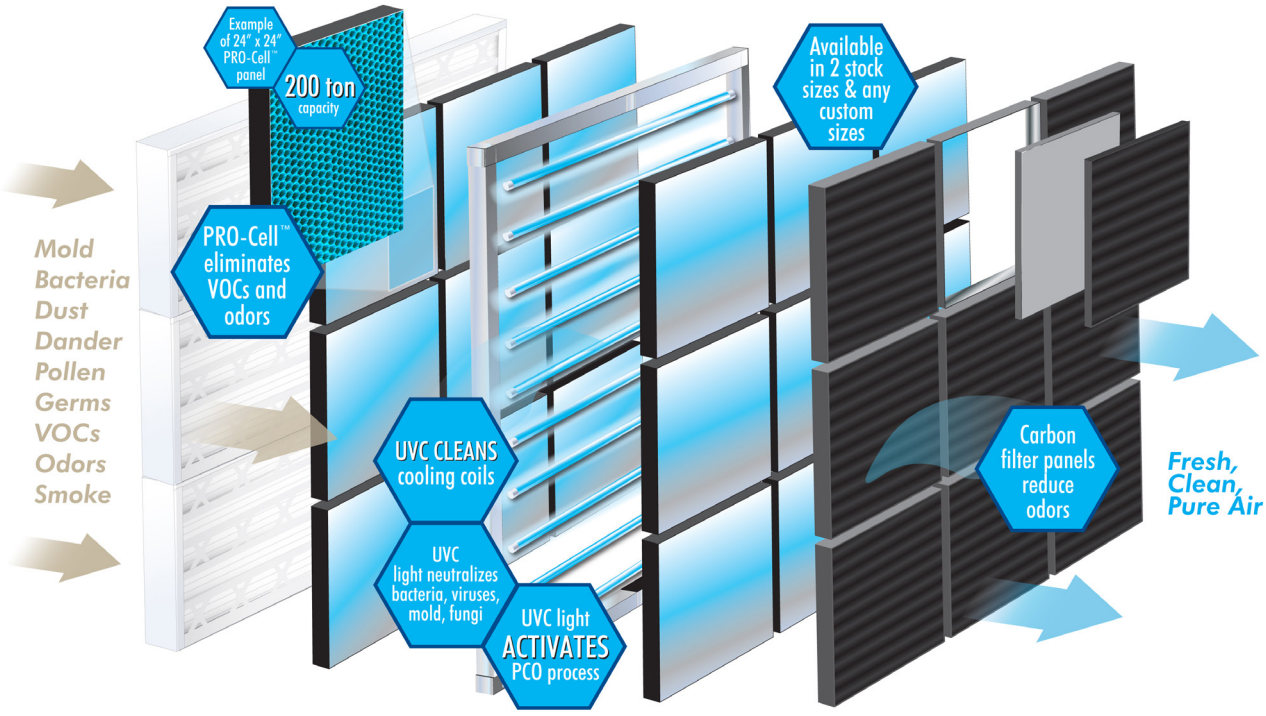
Photocatalytic Oxidation (PCO) is a cutting-edge air purification technology that actively eliminates harmful airborne contaminants to improve indoor air quality. Using a combination of UV light and a catalyst, typically titanium dioxide, PCO breaks down and neutralizes pollutants such as volatile organic compounds (VOCs), bacteria, viruses, mold spores, and other harmful pathogens. This advanced process converts these contaminants into harmless by-products like water and carbon dioxide, providing a safe and efficient way to purify the air.

Unlike traditional filtration methods that only trap particles, Photocatalytic Oxidation goes a step further by actively destroying pollutants at a molecular level. It's a powerful solution for reducing odors, harmful gases, and microscopic contaminants, making it ideal for homes, offices, healthcare facilities, and other indoor environments where clean air is crucial. PCO technology ensures that the air you breathe is not only filtered but truly purified, contributing to a healthier and safer indoor environment.

### PHOTOCATALYTIC OXIDATION (PCO)

Photocatalytic Oxidation is an innovative technology that reduces volatile organic compounds (VOCs), odors, and harmful gases. PCO systems use a catalyst activated by UV light to break down contaminants into harmless by-products such as water vapor and carbon dioxide. This process effectively removes chemical pollutants, creating a fresher and more pleasant indoor environment while protecting occupants from the risks associated with VOC exposure.

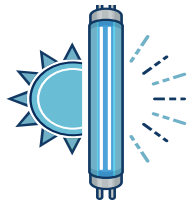




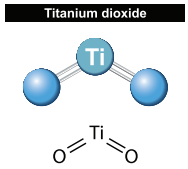

### INTEGRATED SOLUTIONS FOR COMPREHENSIVE PROTECTION

Field Controls' technologies are designed to work individually or together for a multi-layered approach to air purification. Combining UVC light, high-efficiency filtration, and PCO technology provides comprehensive protection against germs, particulates, and gases, ensuring cleaner air in homes, schools, offices, and other commercial spaces.

With a commitment to innovation and proven science, Field Controls delivers advanced solutions that prioritize health, safety, and comfort. Trust our technologies to reduce airborne contaminants and create environments where people can thrive.



**UVC light is emitted from lamp**




**Titanium dioxide, reacts to UVC light**

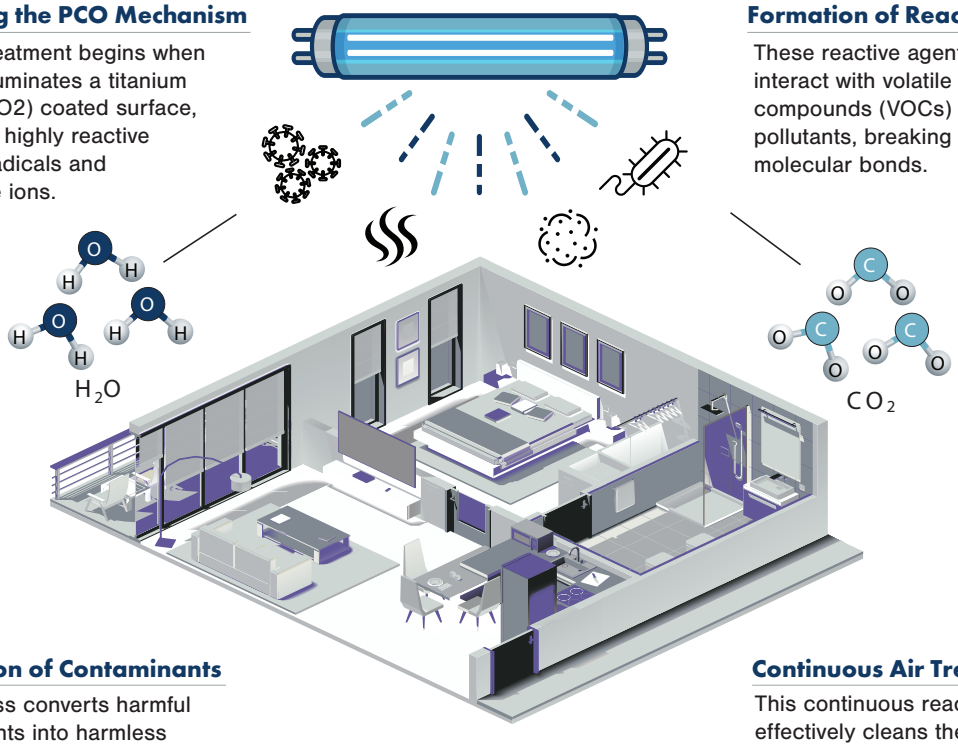
## PCO (PHOTOCATALYTIC OXIDATION)

### Activating the PCO Mechanism

PCO air treatment begins when UV light illuminates a titanium dioxide (TiO2) coated surface, generating highly reactive hydroxyl radicals and superoxide ions.

### Formation of Reactive Agents

These reactive agents interact with volatile organic compounds (VOCs) and other pollutants, breaking their molecular bonds.




### Conversion of Contaminants

The process converts harmful contaminants into harmless substances like carbon dioxide (CO2) and water vapor (H2O).

### Continuous Air Treatment

This continuous reaction effectively cleans the air, reducing odors, VOCs, and biological contaminants without producing harmful byproducts

## PROTECTING YOUR SPACE WITH PATHOGEN CONTROL

Air disinfection is essential for maintaining a healthy indoor environment, especially in hospitals, schools, offices, and homes. Unlike traditional filtration, it actively reduces airborne pathogens like bacteria, viruses, and mold spores, ensuring cleaner, safer air.

Advanced methods like UVC light and Photocatalytic Oxidation (PCO) destroy harmful microorganisms at the molecular level, continuously reducing airborne contaminants and enhancing protection against infections and respiratory issues.

Integrating air disinfection into HVAC systems improves air quality, reduces illness risk, and enhances comfort, creating a safer environment in healthcare, commercial, and residential spaces.

# APPLICATIONS

## SOLUTIONS FOR EVERY INDUSTRY

### SCHOOLS

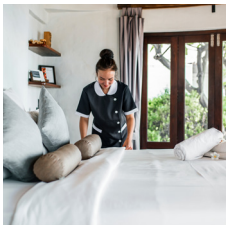
Create a safe and conducive learning environment with our IAQ solutions. Our systems help reduce allergens, control pollutants, and minimize germs, contributing to a healthier atmosphere that supports students' well-being and academic performance. By improving indoor air quality, schools can also reduce absenteeism and foster a more focused and productive learning environment for both students and staff.

### HEALTHCARE FACILITIES

Maintain a sterile and safe environment with our advanced air cleaning technologies. Our solutions address critical concerns such as airborne pathogens, allergens, and odors, ensuring a clean and safe space for patients, staff, and visitors. By improving air quality, our systems also help reduce the risk of healthcare-associated infections, fostering greater confidence and peace of mind for everyone in the facility.

### AIRPORTS

Enhance air quality in high-traffic areas with our robust IAQ solutions. From controlling allergens and pollutants to reducing germs and odors, our systems provide effective air purification to create a comfortable and welcoming environment for travelers and airport staff. Additionally, by improving ventilation and air cleanliness, our solutions help support compliance with health and safety standards, ensuring a safer and more enjoyable experience for all.



### HOTELS

Ensure a pleasant stay for your guests with our comprehensive air quality solutions. Our systems tackle allergens, unpleasant odors, and airborne contaminants, helping to create a fresh and comfortable atmosphere in guest rooms, lobbies, and other hotel areas. By prioritizing clean air, you not only enhance guest satisfaction but also reinforce your commitment to providing a safe and healthy environment for everyone who visits your establishment.

### COMMERCIAL BUILDINGS

Improve the air quality in your commercial spaces. Our systems efficiently address various air quality challenges, including airborne pollutants, allergens, and microbial contaminants, enhancing the overall comfort and health of occupants. By integrating advanced air purification technologies, our solutions also support increased productivity, reduce absenteeism, and contribute to a safer and more inviting environment for employees and visitors alike.

### CASINOS

In casino environments, maintaining superior air quality is essential for the comfort and well-being of guests and staff. With large crowds, continuous activity, and various sources of airborne contaminants such as smoke, dust, and VOCs, clean air can significantly enhance the overall experience.

### IN VITRO FERTILIZATION LABS

The in vitro fertilization (IVF) process demands an environment with exceptionally clean air. Contaminants like VOCs or germs can compromise the success of egg fertilization. That's why IVF labs rely on the Field Controls Cube to deliver advanced air filtration and purification, ensuring an optimal environment for this delicate procedure.

## ELEVATE AIR QUALITY ACROSS VARIOUS ENVIRONMENTS

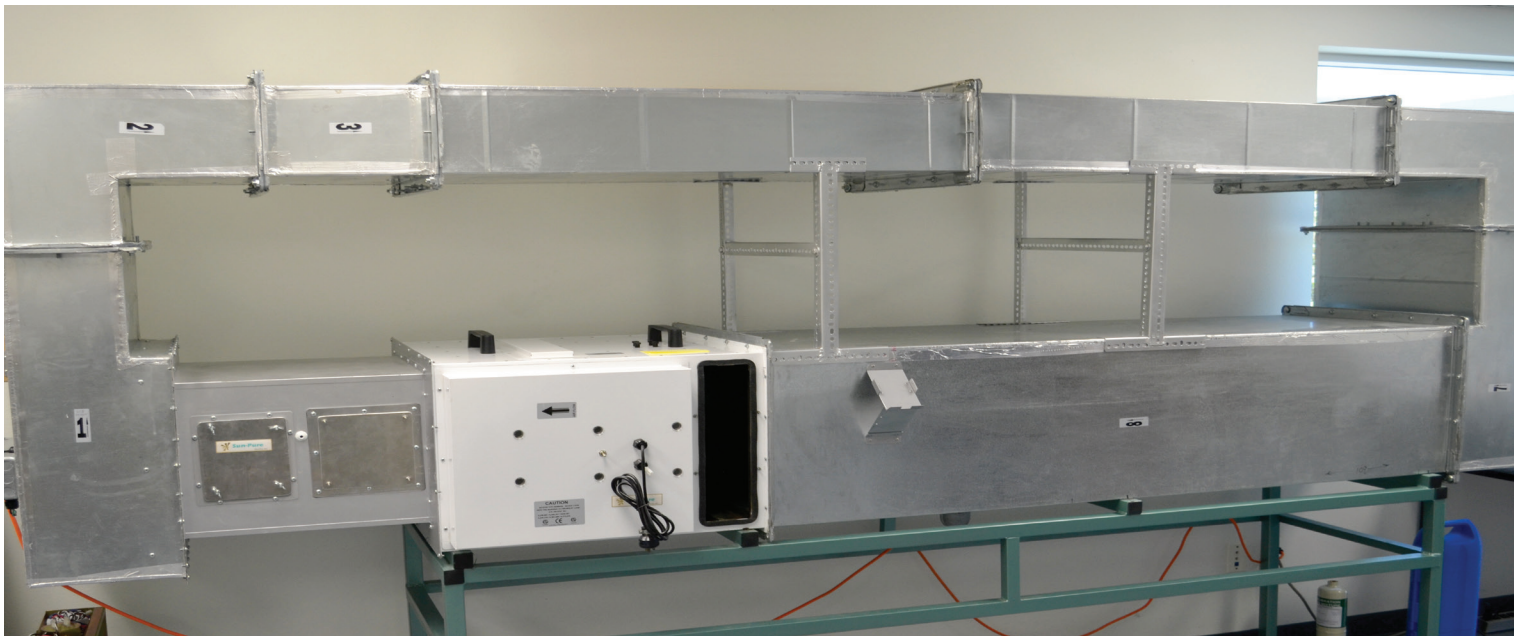
At Field Controls, we improve indoor air quality with solutions tailored to diverse environments. Our systems support clean air in schools, healthcare facilities, and commercial spaces, addressing allergens, pollutants, and odors. From high-traffic areas to compliance with health standards, we deliver reliable air purification for healthier, more inviting spaces.

### COMMERCIAL APPLICATIONS

Airports, casinos, hospitals, IVF labs, nail salons, veterinary clinics, manufacturing plants, and more all face unique air quality challenges. Field Controls provides a versatile, scalable, and customized solution to meet these needs. Our patented PRO Cell technology pairs powerful UVC irradiation with advanced photocatalytic oxidation to effectively reduce VOCs and eliminate odors. When combined with high efficiency filtration, this system delivers clean, pure, odor free air, creating healthier, more welcoming environments

# EXPERTISE

## PRO-CELL™ TESTING



### TEST RESULTS: INDUSTRY-LEADING AIR PURIFICATION EFFICIENCY

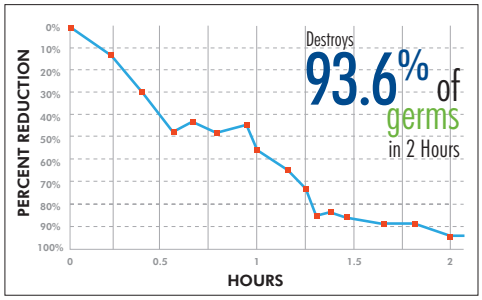
Field Controls' advanced air treatment technology ensures cleaner, safer indoor environments. Independent testing confirms outstanding performance across key metrics:

- **93.6% Viral and Bacterial Reduction Efficiency:** Effectively targets airborne pathogens to help minimize illness spread.
- **80% Volatile Organic Compound (VOC) Reduction:** Breaks down pollutants from cleaning products, paints, and materials for fresher air.
- **93.7% Particle Reduction (1.0 Micron):** Captures fine particles like allergens, dust, and other harmful matter.
- **Destroys Ozone and Formaldehydes:** Converts ozone to oxygen and breaks down toxic household chemicals.

### TESTED AND APPROVED BY LEADING INSTITUTIONS

Our technology has been rigorously tested and validated by some of the world's most respected research and testing facilities, including:

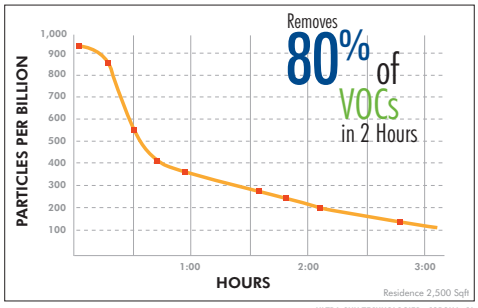
- **Chalmers University of Technology** (Gothenburg, Sweden)
- **Alpha, Scientists in Reproductive Medicine** (USA)
- **Sandia Laboratory & National Renewable Energy Laboratory**
- **Hong Kong Polytechnic University, Department of IAQ**
- **US Department of Defense**



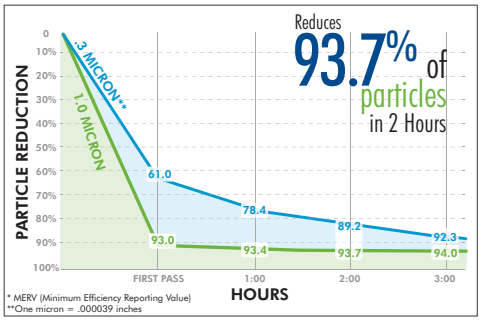

HONG KONG POLYTECHNIC UNIVERSITY - DEPARTMENT OF APPLIED BIOLOGY AND CHEMICAL TECHNOLOGY

### SAFE AIR PURIFICATION

Field Controls ensures clean indoor air without harmful by-products. Our UVC lamps eliminate ozone, converting it back into oxygen for safer breathing. Ozone, a hazardous gas, can cause respiratory issues, worsen asthma, and weaken the immune system. Learn more at www.epa.gov.




ULTRA-SUN TECHNOLOGIES - CORONA, CA




ULTRA-SUN TECHNOLOGIES - CORONA, CA

EXPERTISE

## CASINOS

*"Our air quality has dramatically improved since installing the PRO-Cell™ Panel System. Our customers have noticed the difference."*

-Casino Manager
San Diego, California

Heavy concentrations of VOCs, such as cigarette smoke, produce a serious challenge for casino managers. Studies have shown that casino patrons stay longer and play more when the air quality in the casino if fresh and clean. Leading casino operators are adding PRO-Cell™ technology to their existing air conditioning system to efficiently eliminate VOCs, smoke and cooking odors, as well as microbial contaminants. PRO-Cell™ panels, typically 24" x 24", are configured into a one inch think PCO "wall" inside each roof-top air handling unit. A bank of UVC lamps is positioned before and/or after the PRO-Cell™ panels. Together, the lights and PRO-Cell™ panels work to clean the air of odor causing compounds such as airborne mold, bacteria, and viruses. The entire configuration can be installed in a space as narrow as ten inches. Twenty-two such systems were used to purify the air in a 250,000 square foot casino in California.

## IN VITRO FERTILIZATION LABS

*"The air in our IVF lab has to be pristine...Completely free of odors, VOCs, germs, and dust. It is truly a life or death situation."*

-In Vitro Fertilization Lab Manager
Chapel Hill, North Carolina

The In Vitro fertilization process is a delicate one and requires ultra-clean air. The presence of VOCs or germs can prevent the successful fertilization of an egg. IVF labs turn to the Field Controls Cube Commercial Air capable of purifying the air handled by a six ton system. Up to six Cubes can be bundled together to handle up to 36 ton capacity. In Chapel Hill, North Carolina, we combined two units for twelve ton capacity in a new 6,000 square foot IVF lab. Each module contains a MERV 13 high efficiency filter to capture particulates and three PRO-Cell™ modules that contain two UVC high-intensity lamps and 10,080 square inches of active photocatalytic activated surface area. Since the lab only operates during regular hours, the Cube is dormant at night. It is activated in the morning when the staff arrives. Within 30 minutes, the air is quickly cleaned and the lab is ready for business.

## AIRPORTS

*"When one plane uses its engine to back away from the gate, the fumes from jet fuel can destroy the air quality in that concourse within seconds. We installed PRO-Cell™ panels to eliminate that danger"*

-Airport Manager
Southern California

Jet engine exhaust, VOCs, and toxic gases are in the air in every airport in the world. In the past, airport managers have used exhaust fans and filters to try to stabilize the air. They are now adding PRO-Cell™ panels to reduce cost and eliminate jet fuel fumes. As with casinos, PRO-Cell™ panels and UVC light banks are added to new and existing air handling units to clean the air of jet fuel fumes. VOCs, and other toxins.

# CANARY IAQ ANALYSIS SYSTEM

## AIR QUALITY ANALYZER


## TAKE CONTROL OF INDOOR AIR QUALITY WITH REAL-TIME INSIGHTS

The Canary IAQ Analysis System provides a simple, effective solution for analyzing indoor air quality. Equipped with high-precision sensors, it measures key parameters like particulates, VOCs, carbon dioxide, and humidity. With automated operation and wireless connectivity, the system delivers detailed, actionable reports to your email, empowering you to identify potential issues early, ensure compliance, and maintain a healthier environment.

- **Automated, Easy Operation:** Minimal setup is required, making it easy to deploy for continuous indoor air quality (IAQ)monitoring
- **Portable and Convenient Design:** Its compact, portable design allows it to be easily moved and set up in various locations
- **Real-Time Wireless Monitoring:** Built-in cellular modem provides wireless connectivity, ensuring IAQ data can be transmitted and accessed remotely in real-time
- **Rapid, Detailed Reports:** Users receive reports via email with detailed insights into air quality, including 30-minute flash reports and more comprehensive multi-day reports
- **Highly Accurate Sensors:** Monitors key IAQ parameters such as particulate matter (PM10, PM2.5), TVOCs, carbon dioxide, carbon monoxide, temperature, humidity, and pressure with high precision
- **Proactive Solutions:** Early identification of air quality issues allows for timely corrective measures, helping ensure compliance with regulatory standards and promoting healthier indoor environments
- **Compliance and Health Focus:** Helps maintain compliance with IAQ standards while promoting a healthier indoor atmosphere by monitoring critical pollutants and environmental factors

## HOW IT WORKS

The Canary IAQ Analysis System provides a simple, effective solution for analyzing indoor air quality. Equipped with high-precision sensors, it measures key parameters like particulates, VOCs, carbon dioxide, and humidity. With automated operation and wireless connectivity, the system delivers detailed, actionable reports to your email, empowering you to identify potential issues early, ensure compliance, and maintain a healthier environment.

# WELSPACE IAQ MONITORING SYSTEM

## AIR QUALITY MONITOR


## MONITOR AND OPTIMIZE INDOOR AIR QUALITY WITH PRECISION

The WelSpace IAQ Monitoring System provides real-time monitoring of key air quality indicators, including temperature, humidity, VOCs, and particulate matter. Ideal for commercial facilities, it ensures a healthier and more comfortable environment by delivering accurate data to help identify and address air quality issues. With its advanced technology, facility managers can take proactive steps to maintain optimal IAQ and improve occupant well-being.

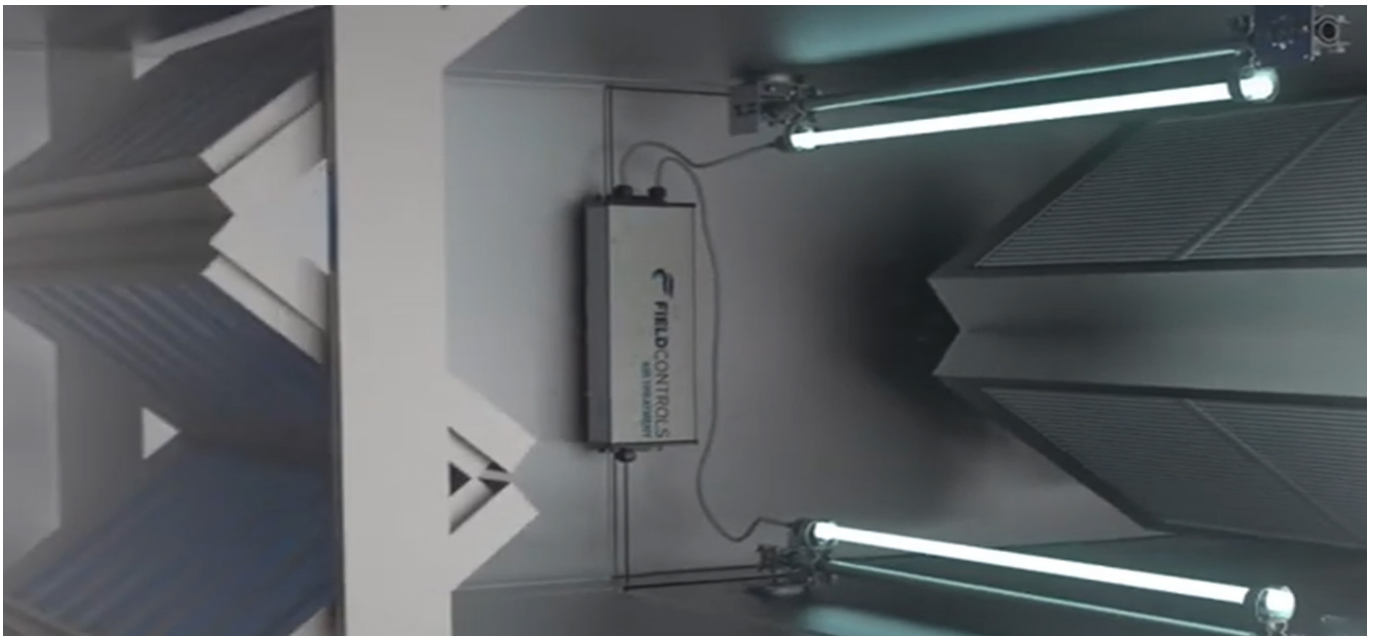
- **Demand-Driven Ventilation:** Reduce energy costs by ventilating only when necessary
- **Real-Time Air Quality Monitoring:** Instantly track indoor air conditions for immediate insights
- **Advanced Data Analytics:** Identify trends and improvement opportunities with precise IAQ metrics
- **Customizable Alerts & Notifications:** Stay updated on air quality changes via email, SMS, or app notifications
- **Smart Ventilation Automation:** Optimize ventilation based on live IAQ data for a balanced indoor environment
- **Intuitive User Interface:** Easily access data, make adjustments, and set alerts from any device
- **Comprehensive Data Logging:** Store and analyze historical air quality data for reporting and compliance needs
- **Seamless HVAC Integration:** Upgrade your existing system with efficient, cost-effective IAQ enhancements
- **Remote Monitoring & Control:** Manage and adjust air quality settings anytime, anywhere

## HOW IT WORKS

WelSpace continuously monitors the air for critical factors like temperature, humidity, volatile organic compounds (VOCs), and particulate matter (PM). Using advanced sensing technology, the unit collects real-time data and transmits it to a connected control system or display. This data allows facility managers to identify air quality issues and make informed adjustments to ventilation, filtration, or other IAQ solutions. By providing actionable insights, the sensor ensures healthier, more comfortable indoor environments while supporting energy-efficient system performance.


# COMMERCIAL UV AIR PURIFIER

## COIL CLEANING




### KEEPS COILS CLEAN & AIR PURE WITH ADVANCED UV TECHNOLOGY

The Commercial UV Air Cleaning System is designed to tackle two critical issues: air disinfection and coil cleanliness. AC coils in dark, moist environments are prime locations for mold and biofilm growth, which release harmful microorganisms into the air during each system cycle. By placing a UV lamp near the AC coil, this system prevents buildup, ensuring cleaner air and optimal coil performance. The result is improved HVAC efficiency, reduced energy costs, lower maintenance requirements, and extended equipment lifespan.

- **Advanced UVC Technology:** Reduces airborne pathogens, including bacteria, viruses, and mold, for cleaner, healthier air
- **Enhanced Coil Cleaning:** Prevents dirty coils from overworking your system, reducing energy consumption and operational costs
- **Energy Efficiency:** Optimizes HVAC system performance in demanding commercial environments
- **Durable Design:** Constructed for long-lasting performance in demanding commercial environments
- **Customizable Installation Options:** Easily adapts to various HVAC configurations for seamless integration
- **Continuous Cleaning:** UV-C technology 24/7 coil cleaning, ensuring peak performance without downtime
- **Low Maintenance Solution:** Minimize the need for manual coil cleaning, saving time and labor costs
- **Proven Effectiveness:** Reduces up to 99% of mold and bacteria
- **Environmentally Friendly:** Reduce reliance on harsh chemicals for coil cleaning, contributing to a safer, greener facility



### HOW IT WORKS

The Commercial UV Air Cleaning System emits high-output UVC energy at 253.7 nanometer wavelength, providing cost-effective coil irradiation and air treatment without producing hazardous ozone. The high-intensity UVC lamp reduces microbiological contaminants like fungi, mold, bacteria, and viruses found within the HVAC system. This results in mold-free coils, toxin-free indoor air, and optimized airflow, ensuring peak HVAC equipment efficiency.

# HYDROGEN PEROXIDE CLEANER
## AIR DISINFECTION

## EFFECTIVE AIR DISINFECTION FOR DUCTLESS SYSTEMS

The Airow 3 Hydrogen Peroxide Air Cleaner is specifically designed to deliver powerful air disinfection for ductless systems, including mini-split AC units, VRF systems, and ceiling cassettes. By generating a safe, low-level hydrogen peroxide mist, it reduces airborne bacteria, viruses, and mold directly within the unit. This ensures cleaner, healthier air while maintaining system efficiency and reducing maintenance requirements for ductless HVAC systems.

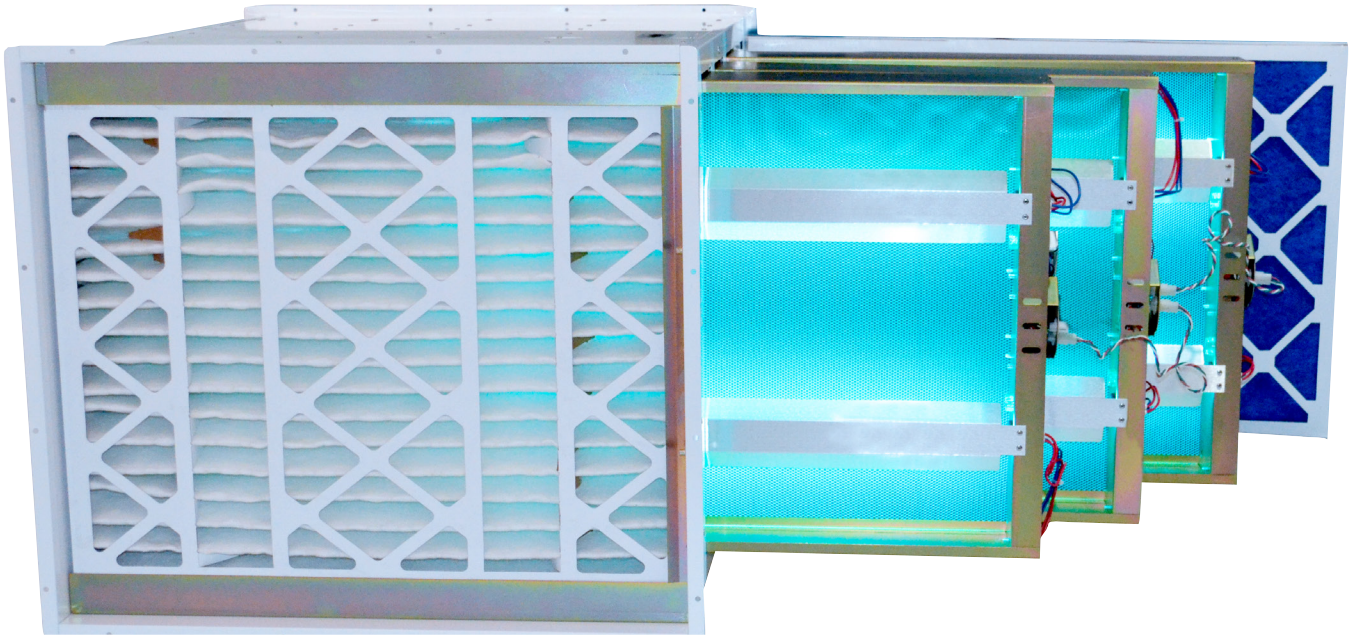
- **Powerful Air Disinfection:** Reduces airborne bacteria, viruses, and mold for healthier indoor environments
- **Advanced Hydrogen Peroxide Technology:** FDA-cleared and lab-tested for reliable and verified effectiveness against airborne pathogens
- **Zero Maintenance:** Requires no maintenance, offering a hassle-free, long-lasting solutions for improved air quality
- **Continuous Protection:** Works even when the AC is off, ensuring ongoing air purification throughout the day
- **Simple Installation:** Easy plug-and-play installation designed for mini-split AC systems and ceiling cassettes
- **Safe and Eco-Friendly:** Emits zero ozone, ensuring safe operation without harmful emissions, meeting stringent environmental standards
- **Versatile Applications:** Ideal for homes, schools, offices, healthcare facilities, hotels and more

## HOW IT WORKS

TADIRAN AIROW 3™ uses a discharge current to break apart oxygen ($O_2$) molecules into two separate atoms. The free oxygen atoms combine with water ($H_2O$) molecules in the airflow and transform into purifying Hydrogen Peroxide ($H_2O_2$). The $H_2O_2$ is then distributed into the indoor space by the air conditioning unit. When the $H_2O_2$ encounters viruses, bacteria, mold, or other airborne contaminants, it breaks down the exterior structures, thus inactivating and reducing aerosol pathogens.

# CUBE COMMERCIAL AIR PURIFIER

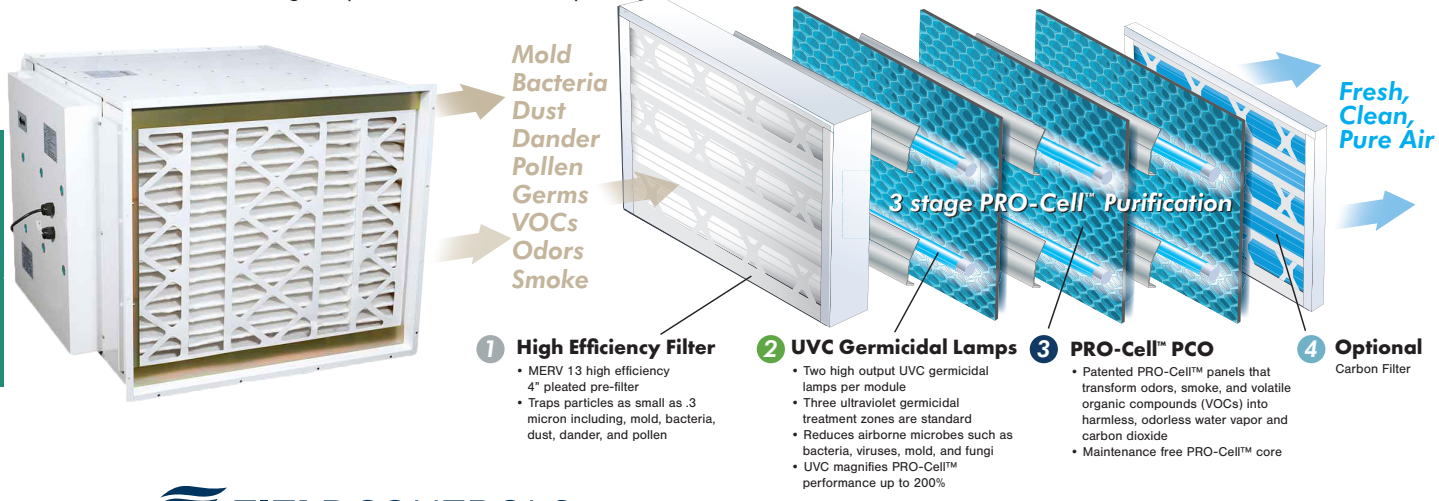
## AIR PURIFICAITON



## COMPREHENSIVE AIR PURIFICATION FOR COMMERCIAL SPACES

The Cube Commercial 3-in-1 Cleaning System provides robust air purification by combining high-efficiency filtration, UVC light, and PRO-Cell® technology. This powerful system reduces airborne allergens, bacteria and viruses, and VOCs and odors, ensuring cleaner, healthier air throughout commercial facilities. Engineered for ducted HVAC systems, it enhances indoor air quality while supporting efficient system performance.

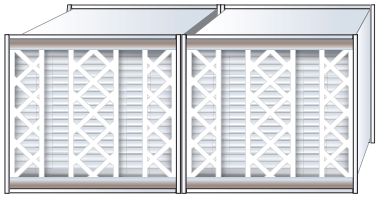
- **Multi-Stage Air Purification:** Combines multiple filtration and treatment technologies for comprehensive indoor air quality improvement
- **PRO-Cell™ Oxidation Technology:** Advanced oxidation process reduces harmful VOCs, bacteria, and viruses for cleaner air
- **High-Efficiency MERV 13 Filtration:** Captures fine airborne particles like dust, pollen, and mold spores, improving air quality
- **Six High-Intensity UVC Lamps:** Provides powerful UV disinfection, reducing the presence of airborne pathogens.
- **Designed for Commercial Environments:** Built to meet the demands of high-traffic, larger spaces like offices, schools, and retail
- **Compatible with Systems up to 6 Tons:** Easily integrates with large HVAC systems, ensuring efficient performance in larger installations
- **Ozone-Free Operation:** Ensures safe air treatment without producing harmful ozone by-products.
- **Odor Reduction Technology:** Effectively removes unpleasant odors, leaving the air fresh and clean



### CUSTOMIZABLE CUBE CONFIGURATION FOR SCALABLE AIR PURIFICATION

A single Cube delivers comprehensive air purification for systems up to six tons. For larger applications, Cubes can be bundled or configured in groups to handle capacities up to 36 tons. Each module features a high-performance MERV 13 filter to trap particulates, along with three PRO-Cell™ modules housing two high-intensity UVC lamps and 10,080 square inches of photocatalytic activated surface area for advanced air treatment.

**BUNDLED CONFIGURATIONS**



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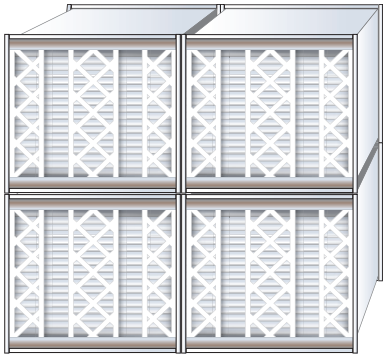

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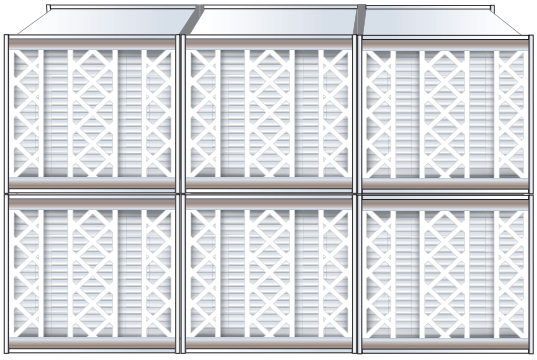


Six


**Example**
24 ton capacity scalable package shown

# CUSTOM PRO-CELL™ PANEL SYSTEMS

## AIR PURIFICAITON

### MODULAR PANEL SYSTEM FOR LARGE-SCALE INSTALLATION

Field Controls PRO-Cell™ Panel System is a cutting-edge air purification solution engineered for large commercial and industrial applications. PCO panels deliver superior VOC reduction and odor control. For even greater performance, an optional carbon filter can be added to target a broader spectrum of air contaminants.

Designed to seamlessly integrate into air handling units (AHUs) or HVAC ductwork, the PRO-Cell™ Panels operate out of sight while ensuring consistent, high-quality air purification. Its modular design allows for full customization, making it the ideal choice for facilities with high airflow demands or unique HVAC configurations.

### ADVANCED VOC REDUCTION TECHNOLOGY

Volatile organic compounds (VOCs) are a significant contributor to indoor air pollution and can impact both health and productivity in commercial settings. The PRO-Cell™ Panel System uses Field Controls' patented photocatalytic oxidation technology to break down VOCs into harmless by-products, effectively reducing odors and improving air quality.

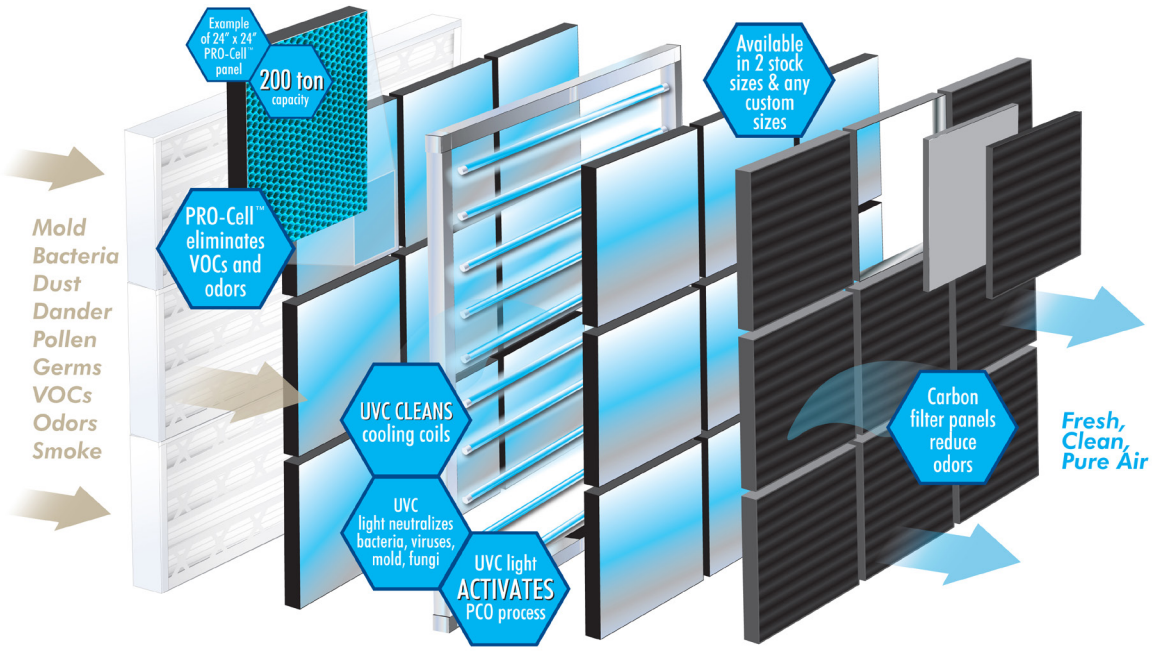
### APPLICATIONS

The PRO-Cell™ panels are ideal for various commercial and industrial environments, including:

- Office buildings
- Manufacturing facilities
- Healthcare facilities
- Educational institutions
- Retail spaces
- Hospitality venues

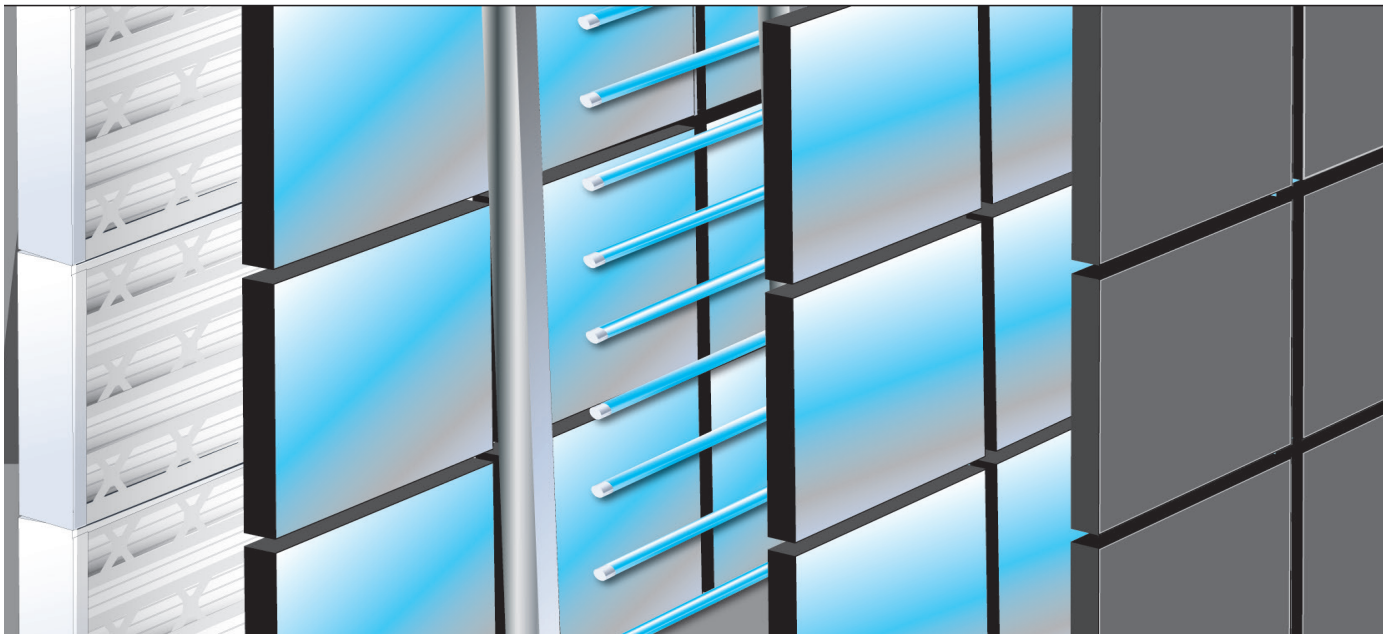
### FIELD CONTROLS ADVANTAGE

With decades of experience in air quality innovation, Field Controls delivers solutions you can trust. The Custom PRO-Cell™ Panel System reflects our commitment to advanced technology, superior performance, and exceptional customer support. Whether you're looking to improve air quality in a single facility or a large-scale operation, Field Controls has the expertise and products to meet your needs.



# CUSTOM PRO-CELL™ PANEL SYSTEMS

## AIR PURIFICATION



### MODULAR PANEL SYSTEM FOR LARGE SCALE INSTALLATION

The Field Controls PRO-Cell™ Panel System is a powerful air purification solution designed for large commercial applications. Featuring an array of high-output UVC lamps paired with one or two banks of photocatalytic oxidation (PCO) panels, it effectively reduces VOCs, odors, germs, and particulates. An optional carbon filter bank can be added for enhanced performance. Engineered to integrate seamlessly into air handling units or HVAC ductwork, the system remains completely out of sight while delivering clean, purified air. Fully customizable and scalable, the PRO-Cell™ Panel System is the ideal choice for large-scale commercial HVAC installations.

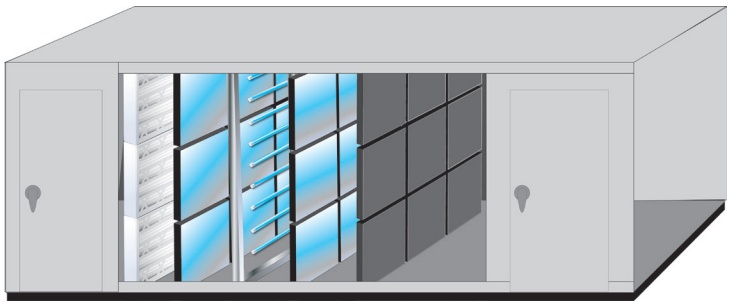
### STANDARD SIZES

12 x 24 x 1

24 x 24 x 1

### CUSTOM SIZES

Per Square Inch



### CUSTOMIZED PANEL SYSTEMS

Our panels are designed with flexibility in mind, making them the perfect solution for both new installations and retrofit projects. They can be tailored to seamlessly fit virtually any HVAC system, ensuring air purification without compromising existing infrastructure.

# TRIO PLUS PORTABLE AIR PURIFIER

## PORTABLE AIR PURIFICATION


## PORTABLE AND POWERFUL AIR PURIFICATION FOR ANY SPACE

The TRIO Plus Portable Air Purifier combines advanced filtration, high-intensity UVC light, and PRO-Cell™ technology to deliver comprehensive air purification. It captures and reduces allergens, bacteria, viruses, VOCs, and odors, ensuring cleaner, healthier air in any environment. Compact and easy to use, it's perfect for homes, office, or any space in need of reliable air treatment.

- **High CADR and Airflow:** With a Clean Air Delivery Rate of 305 and airflow of 440 CFM, purifying spaces up to 3,300 sq. ft. in one hour
- **True HEPA Filtration:** Captures 99.97% of particles as small as 0.3 microns down to 0.1 micron, including dust, smoke, pollen, and PM2.5
- **PRO-Cell™ VOC Reduction Technology:** Breaks down toxic VOCs into harmless $CO_2$ and water vapor, reducing gases and odors
- **High-Efficiency UVC Protection:** Two UVC lamps reduce bacteria, viruses, and fungi by 99.97% offering strong pathogen protection
- **Multi-Stage Filtration:** Includes a pre-filter to capture larger particles like hair and pet dander
- **Quiet and Efficient:** Operates at a low noise level (55 dB), making it ideal for environments like classrooms, offices, and homes
- **Versatile Application** Suitable for a wide range of settings, including classrooms, offices, gyms, restaurants, and medical facilities
- **CARB Certified:** Meets California ozone emissions standards, ensuring it safe for continuous use

1 **Multi-Stage True HEPA Filtration**
Traps particles such as smoke, dust, dander, pollen, and PM2.5 particulates

2 **Patented PRO-Cell™ Technology**
Dramatically reduces toxic VOCs and odors

3 **UVC Lamps**
Two Powerful UVC excites PRO-Cell™ Technology

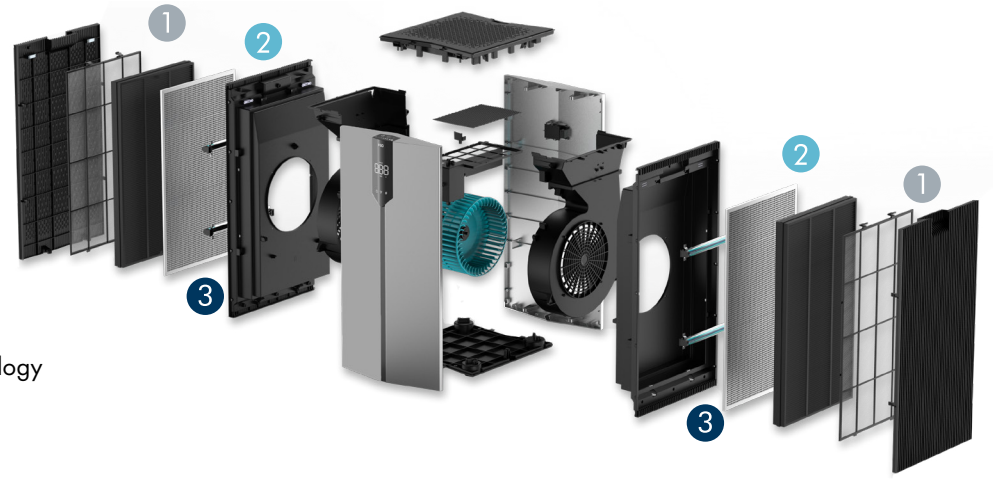
# TRIO PRO COMMERCIAL AIR PURIFIER

## PORTABLE AIR PURIFICATION

### HIGH-PERFORMANCE AIR PURIFICATION

The TRIO Pro Commercial Air Purifier offers powerful, all-in-one air cleaning with a blend of advanced filtration, high-output UVC light, and proprietary PRO-Cell™ technology. Designed to effectively capture and neutralize allergens, bacteria, viruses, VOCs, and unwanted odors, it provides cleaner, healthier air wherever it's needed. Its compact design and user-friendly operation make it an ideal solution for homes, offices, or any space requiring dependable air purification.

- **High CADR and Airflow:** With a Clean Air Delivery Rate of 518 and airflow of 647 CFM, purifying spaces up to 4,853 sq. ft. in one hour
- **True HEPA Filtration:** Captures 99.97% of particles as small as 0.3 microns down to 0.1 micron, including dust, smoke, pollen, and PM2.5
- **PRO-Cell™ VOC Reduction Technology:** Breaks down toxic VOCs into harmless $CO_2$ and water vapor, reducing gases and odors
- **High-Efficiency UVC Protection:** Four UVC lamps reduce bacteria, viruses, and fungi by 99.97% offering strong pathogen protection
- **Multi-Stage Filtration:** Includes a pre-filter to capture larger particles like hair and pet dander
- **Quiet and Efficient:** Operates at a low noise level (58 dB), making it ideal for environments like classrooms, offices, and homes
- **Versatile Application** Suitable for a wide range of settings, including classrooms, offices, gyms, restaurants, and medical facilities
- **CARB Certified:** Meets California ozone emissions standards, ensuring it safe for continuous use




**1 Multi-Stage True HEPA Filtration**
Traps particles such as smoke, dust, dander, pollen, and PM2.5 particulates

**2 Patented PRO-Cell™ Technology**
Dramatically reduces toxic VOCs and odors

**3 UVC Lamps**
Four Powerful UVC excites PRO-Cell™ Technology

# CUSTOM TRIO PLUS AIR PURIFIERS

## PORTABLE AIR PURIFICATION



HARVARD

USC

UNIVERSITY of WASHINGTON

UNIVERSITY OF SOUTH ALABAMA

LSU
LOUISIANA STATE UNIVERSITY

SEATTLE PUBLIC SCHOOLS

PORTLAND PUBLIC SCHOOLS

PUSD

THE UNIVERSITY OF TAMPA

PASSAIC PUBLIC SCHOOLS

San Elizario I.S.D.
SOARING TO EXCELLENCE

MIDLOTHIAN ISD
INSPIRING EXCELLENCE

A JOURNEY TO EXCELLENCE
ADVENTIST ACADEMY OF SANTA FE

Washoe County School District

NEW MEXICO
NMPED
Public Education Department

PISD
Setting the Standard in Education

DAYTON PUBLIC SCHOOLS

Bethany CHRISTIAN SCHOOLS

SWTJC
Southwest Texas Junior College

TROJANS
LAKE CITY AREA SCHOOLS

Perth Amboy Public Schools

CHAPEL HILL CHRISTIAN SCHOOL

HILLSBORO SCHOOL DISTRICT

Sacramento City UNIFIED SCHOOL DISTRICT

# NOTES

# NOTES

# NOTES

# NOTES

# GET ALL THE FIELD CONTROLS PRODUCT GUIDES at fieldcontrols.com

*or contact us at 252.522.3031 or sales@fieldcontrols.com*

## Air Treatment Products Guide


The Air Treatment Products Guide features the industry's most complete line of IAQ products and solutions. Included in the guide are specifications on media filters, UV air purifiers, PRO-Cell technology, and fresh air controls, plus wiring diagrams, installation options, and replacement parts.


## Residential Ventilation Products Guide

Our full line of ventilation products offers controlled and balanced ventilation solutions for every home application. Included in the guide are models, specifications, and wiring diagrams for products ranging from ventilation controls and HRVs and ERVs to Fresh Air systems, whole house fans, and more. This guide provides home builders and HVAC contractors with reliable, practical, and proven ventilation solutions that meet code and satisfy homeowners' expectations for comfort, safety, and energy efficiency.

## Combustion Products Guide

Our Combustion Products Guide provides essential information, specifications, and a complete range of solutions for oil, gas, and coal heating appliances. It covers everything from power venters and vent dampers to draft controls, with detailed insights on sizing, system setup, and maintenance. The guide also highlights our specialized combustion air systems and innovative solutions such as the Flue Sentinel and Hearth Combustion Air systems.


**Digital Products Guide**

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FIELDCONTROLS

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