

Solutions for mold, pathogens & odor in the U.S. Military



The U.S. Military faces air quality and pathogen issues.

Bacteria, mold, fungi, yeast, and viruses can propagate in the air and on surfaces. Their presence can increase transmission risk, contamination issues, odors, and health and safety concerns for occupants. The U.S. Military faces numerous issues that result from poor indoor air quality: mold and fungal contamination on military bases, ships, and forward deployment operations; hospital acquired infections; viral transmission in long term care facilities; cigarette smoke in legion halls.

Pyure Dynamic Protection® offers active air purification solutions that can be easily installed into existing buildings and ships, providing significantly cleaner air and surfaces in any size of facility.

Pyure can resolve many issues:



Military bases & ships

- Health risks for personnel due to mold
- Odors impacting occupant experience
- Incremental cleaning and remediation costs
- Excessive capital depreciation



Veterans hospitals

- Hospital acquired infections
- Surgical site infections in operating rooms
- Incremental cleaning and remediation costs



Veterans long term care facilities

- Viral transmission (influenza, respiratory infections)
- Odors impacting patients and staff
- Poor air quality impacting health of residents



Veterans legion halls

- Cigarette smoke impacting non-smokers
- Viral transmission (influenza, other)
- Odors impacting occupant experience



Replicating nature to deliver safe and effective cleaning.

Pyure produces the same natural cleansers present outdoors in the same concentrations — ensuring effective purification of air and cleaning of surfaces in occupied spaces.

What Pyure takes care of:

Bacteria

Viruses

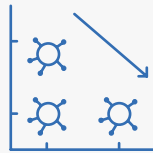
Mold

Fungus & yeast

Odors

Cigarette smoke
& nicotine

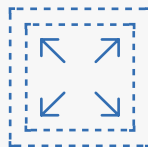
How Pyure works:



Provides superior performance in reducing microbial loads in the air and on surfaces.



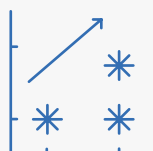
Runs continuously 24/7 while treated spaces are occupied.



Treats any size space with the same efficacy.



Delivered through an existing air handling system or installed as a stand alone solution.



Increases the effectiveness of existing cleaning and sanitation protocols, and HVAC systems.

Proven to reduce microorganisms in the air and on surfaces.

Reduction in air

PATHOGEN	REDUCTION	TIME
MS2 (simulant of RNA viruses ie. Corona)	99.9%	30 mins
	99.999%	90 mins
Phi-X174 (simulant for DNA viruses ie. Smallpox)	99.9%	30 mins
	99.99%	90 mins
Staphylococcus epidermis (Gram-positive bacterium)	99%	30 mins
	Undetectable	90 mins
Erwinia herbicola (Gram-negative bacterium)	99%	30 mins
	99.99%	120 mins
Aspergillus niger (black mold)	99.9%	30 mins
	Undetectable	90 mins
SARS-CoV-2 (COVID-19 virus)	99%	20 mins
	Undetectable	80 mins

Reduction on surfaces

PATHOGEN	REDUCTION	TIME
Escherichia coli	99.99%	180 mins
Salmonella enterica	99.97%	180 mins
Staphylococcus aureus	99.98%	360 mins
Vancomycin-resistant enterococcus (VRE)	99%	360 mins
Bacillus Subtilis	99.99%	48 hrs
Candida Albicans	99.99%	48 hrs
Aspergillus Niger	99.99%	48 hrs
H1N1 Influenza virus	99.999%	360 mins
Murine norovirus	99.99%	360 mins
SARS-CoV-2 virus	99.999%	120 mins

Case studies

Military base

Problem

A military base had a mold issue in barracks and other buildings, creating an unhealthy environment for service people and generating unpleasant odors. The mold was on various surfaces, and it was believed that spores were being distributed through the facility by contaminated ductwork. The contamination in some buildings was so bad that the barracks had to be demolished. In others, the personnel had to be temporarily housed in hotels until a solution could be implemented.



Pyure impact

Pyure portable units were also introduced in the barrack to assess the impact on odors and mold. The base saw an important reduction in odors and mold in the treated area. Personnel commented on the considerable improvement in air quality.

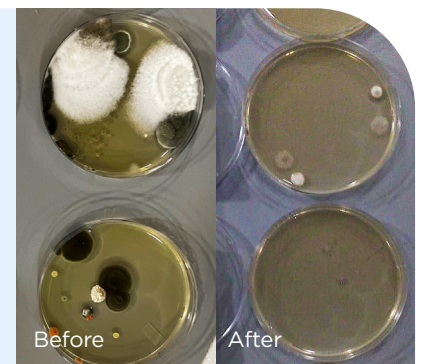
Customer benefit

Following the introduction of Pyure, the base was able to resume using the treated area. The odor and mold were brought under control and did not require any further mitigation. Personnel noted that the air smelled fresher in the treated spaces.

Ship

Problem

A 150-foot-long yacht was infected with multiple species of mold, threatening the crew's and passengers' health and safety. Mold was in the air handling system, facilitating the propagation of spores throughout the ship. Mold test kits placed in various locations revealed significant mold contamination.



Pyure impact

A Pyure solution was installed into the air handling system's ductwork to treat the yacht. After seven days of continuous treatment, subsequent testing revealed that the ship's mold was virtually eradicated. The mold-related odors disappeared, and the crew found that the various cabins smelled fresh. They no longer had any difficulties breathing and resumed sleeping on the yacht.

Customer benefit

The ongoing active purification delivered by the Pyure solution significantly reduced the sanitation and cleaning required on the ship lowering operating costs. In addition, the reduced mold contamination provided passengers and crew with a better experience and helped preserve the asset's value.

Case studies — Hospital operating room

Problem

A hospital observed surgical site infections in certain patients who underwent surgical procedures in the hospital's operating rooms. According to the CDC, the estimated average surgical site infection (SSI) cost can be more than \$25,000, increasing to more than \$90,000 if the SSI involves a prosthetic implant.

The hospital had a number of procedures and protocols in place to reduce the risk of SSIs and was looking for additional ways to minimize the risk and frequency of these infections. The hospital was interested in an air purification system that could reduce microorganisms in the air and on surfaces within the operating room and contacted Steris, the exclusive Pyure distributor for hospital operating rooms.

Pyure impact

Steris installed Pyure induct units into the HVAC system above one operating room, together with Steris' CleanSuite® laminar air flow system. The installation enabled air treated with Pyure to be directed over the operating table, protecting the patient and the surgical team. The system was sized to ensure effectiveness taking into account over 20 air changes per hour in the operating room.

In the months that followed the installation, the hospital did not record any surgical site infections in patients undergoing surgical procedures in the operating room. The hospital subsequently installed the Pyure system in the other operating rooms of the hospital.

Customer benefits

It has been over two years since the Pyure unit was installed in the operating room, and the hospital has not recorded any surgical site infections since. The estimated payback of the Pyure system was less than three months, given the cost of SSIs.

In addition to the reduced risk of surgical site infections, the surgical teams noticed that the operating room smelled fresher and that there was a substantial reduction in the odors resulting from cauterizations and other surgical procedures.



Case studies

Critical infrastructure facility

Problem

A facility with critical infrastructure requiring 24/7 staffing had a COVID-19 outbreak that significantly reduced the number of available staff to operate the facility. This created significant business risk for the operator of the facility. In the past, the facility had experienced similar business risks during severe flu seasons.

Pyure impact

Pyure controlled solutions were installed in several campus buildings to reduce pathogens in air and surfaces. Following the installation of Pyure, the operator did not experience another COVID-19 outbreak originating within the facility and, in the subsequent year, recorded a reduction in the number of cases of influenza within the treated facilities.

Customer benefit

The facility operator determined there was a substantial reduction in the risk of viral transmission and that the payback for the Pyure system was less than six months. Subsequently, the operator deployed Pyure solutions in its other facilities.



Large smoking casino

Problem

A large casino in a hot and humid climate was concerned about microbial contamination. The risk of COVID-19 infection was also prevalent, and there was a need to proactively clean the casino, reassure patrons, and provide a better guest experience. An independent testing lab was brought in to take air and surface samples, and they found elevated mold, bacteria and nicotine in the air and on surfaces.

Pyure impact

A Pyure controlled solution was installed into the air handling system's ductwork to treat the entire casino. After five weeks of operation, the independent lab returned and took the air and surface samples again. Results showed significant reductions in the quantity of mold, bacteria, and nicotine in the air and on surfaces. The air also smelled fresher, and both staff and patrons commented on the clean smell and absence of cigarette smoke and smell.

Customer benefit

The casino communicated to guests the steps taken to provide them with a cleaner, safer environment. These results and the fresher-smelling casino led to increased traffic and longer stays, generating more revenues for the casino and a better guest experience. Employees also reported fewer breathing related problems due to the absence of cigarette smoke

Watch this customer's video testimonial:

pyure.com/ChurchillDowns-video

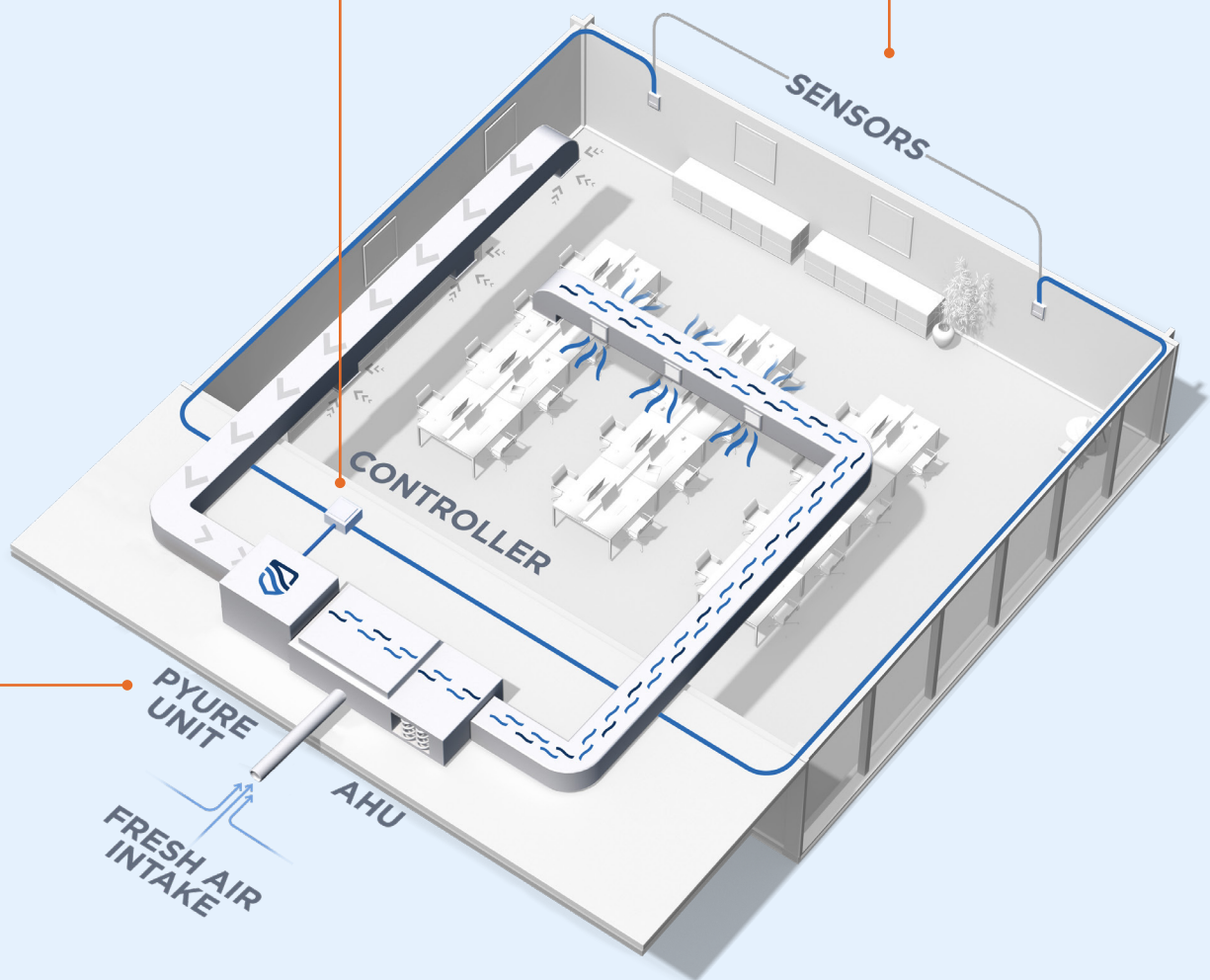


Optimized air quality.

Our completely scalable and sensor driven systems offer customizable controls and helpful data analysis to measure and optimize performance. The Pyure system continuously adjusts as the demand for purification changes over time, ensuring optimal safety, performance, and energy efficiency.

Controller responds to sensor readings and modulates the Pyure device to treat the real-time air quality.

Sensors provide real-time reading to controller.



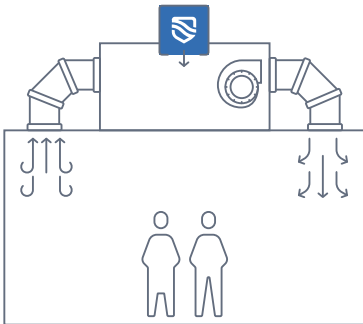
Pyure unit works with single or multiple air handling systems.

Hassle free installation and upkeep.

Pyure solutions can be installed with or without an air handling system.

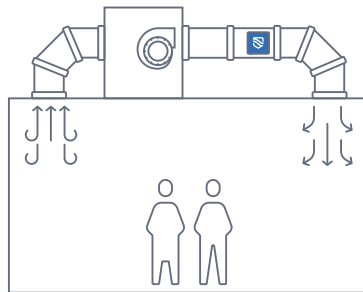
Centralized air handling

- Large rooftop units
- Large indoor units



Decentralized air handling

- Smaller units inserted in ducts throughout the building
- Wall mounted units



No or limited air handling

- Large stand alone units with blowers
- Portable, stand alone units
- Wall mounted units



Pyure makes maintenance easier.

No negative impact on the air handling system

- No increased airflow resistance
- No extra wear and tear
- No impact on existing energy efficiency

Low frequency maintenance and a system that helps clean

- Annual replacement of UV optics and sensors
- Periodic cleaning of filters (frequency depends on the dust and oil concentrations in the air)
- Reduces the frequency and intensity of duct decontamination

Controlled solutions.

Designed to treat even the largest of spaces, our controlled solutions work with new and existing air-handling systems. Sensor-driven with customized controls that respond to real-time data.



Pyure IDI™ Purifier

A versatile solution that fits into the ductwork of any air handling system. Connect with more IDI units to increase the treatment area.

TYPE: Indoor, inline with HVAC

NOMINAL TREATMENT AREA: 3,000 sq ft



Pyure MVP16™ Purifier

Integrates into a new or existing air-handling system where space is limited and provides more cleansing power than induct systems.

TYPE: Indoor, inline with HVAC

NOMINAL TREATMENT AREA: up to 85,000 sq ft

BLOWER: optional



Pyure MVP24™ Purifier

A heavy-duty unit built with a reinforced shell suitable for outdoor applications.

TYPE: Rooftop, inline with HVAC

NOMINAL TREATMENT AREA: up to 200,000 sq ft

BLOWER: optional



Pyure MVP48™ Purifier

Our most powerful system, the MVP48™ purifier is ideal for the largest installations.

TYPE: Indoor, inline with HVAC

NOMINAL TREATMENT AREA: up to 450,000 sq ft

BLOWER: optional



Insight™ Edge Controllers

Controllers modulate purifiers based on feedback from the sensor system, creating an efficient method of treating pollutants in the space.



Sensor system

Air sensors placed throughout the environment send readings to the sensor system which provides constant real-time feedback to the control system.

Non-controlled solutions.

The simplest to install, our non-controlled products can be added to air ducts, wall mounted or plugged into a standard outlet. Switch them on for instant air purification and surface cleaning in small to medium size environments.



Pyure Mini® Purifier

The Mini series is designed to fit in with its small proportions, modern design and low noise levels. This makes it ideal for cleaning and deodorizing air in offices, waiting rooms or any other small commercial space.

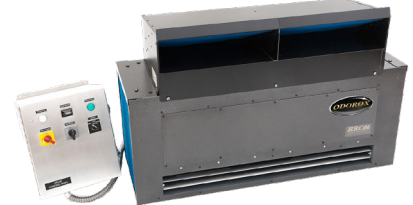
TREATMENT AREA: up to 500* sq ft



Pyure IDU™ Purifier

The IDU purifier is a duct mounted purifier that is easy to install and requires only an electrical connection for operation.

NOMINAL TREATMENT AREA:
2,000* sq ft (model dependant)



Odorox® HRC06™ Air Purifier

The HRC06 purifier is wall mounted and can modulate its output to purify and deodorize commercial and industrial applications.

TREATMENT AREA: up to 6,600* sq ft



Odorox® Slimline™ Purifier Family

Rugged purifiers with a durable exterior beneficial for public spaces and commercial or industrial installations that require a portable unit.

TREATMENT AREA:
up to 900 - 1,500* sq ft



Odorox® Boss™ Purifier

Designed for tough environments, the Boss purifier is suited to applications like remediation following fire or water damage. It's also ideal for areas with frequent movement and contact.

TREATMENT AREA: up to 2,500* sq ft



Odorox® Boss XL3™ Purifier

By adding an external fan to provide greater air movement, the Boss XL3 purifier is ideal for spaces that have been affected by smoke, flooding, wastewater, and other air pollutants.

TREATMENT AREA: up to 3,250* sq ft

Let's discuss a solution tailored to your needs or plan a trial.

At Pyure, we're dedicated to finding the right solution for solving your challenges and delivering the outcomes you need.

Get in touch to find out more about how we can help.

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