

Mitigating pathogen transmission risk, bacteria & odor in healthcare



Many environments have elevated risk of pathogen transmission.

Bacteria, viruses, mold, yeast, and other fungi can propagate in the air and on surfaces. Their presence can increase transmission risk in vulnerable populations, leading to extended hospitalization stays, higher healthcare and employer costs, and less hospitable environments for patients, healthcare workers, and employees.

Pyure Dynamic Protection® offers active air purification solutions that can be easily installed into existing buildings, providing significantly cleaner air and surfaces and reducing the risk of pathogen transmission.

Pyure can treat these environments:



Surgery units & centers

- Surgical site infections
- Airborne pollutants impacting surgical teams
- Litigation risk



Hospitals

- Hospital acquired infections
- Healthcare worker absenteeism due to sickness
- Litigation risk



Long term care facilities

- Infection risks (respiratory, UTI, skin)
- Poor air quality impacting patient health
- Odors impacting patients and staff



Office environments

- Viral transmission (influenza, respiratory infections)
- Employee absenteeism due to sickness
- Employee reluctance to return to work



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 treats:

Bacteria

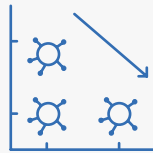
Viruses

Mold

Fungus

Yeast

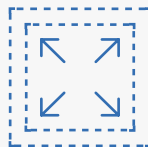
Why Pyure is better:



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



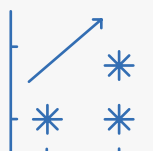
Runs continuously 24/7 while treated spaces are occupied.



Treats any size space with the same efficacy.



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



Improves the effectiveness of existing cleaning and sanitation protocols.

Proven to reduce microorganisms in the air and on surfaces.

Reduction in air

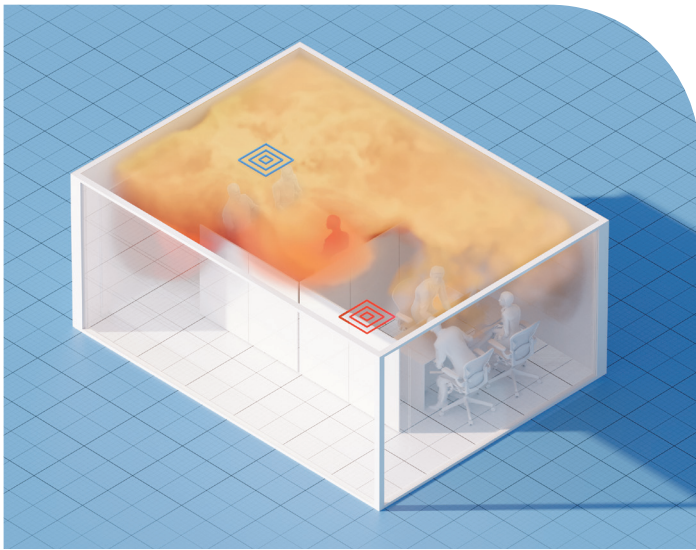
PATHOGEN	REDUCTION	TIME
MS2 (simulant of RNA viruses ie. Corona)	99.9%	30 mins
	99.999%	90 mins
Phi-X174 (simulant for DNA viruses ie. Smallpox)	99.9%	30 mins
	99.99%	90 mins
Staphylococcus epidermis (Gram-positive bacterium)	99%	30 mins
	Undetectable	90 mins
Erwinia herbicola (Gram-negative bacterium)	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

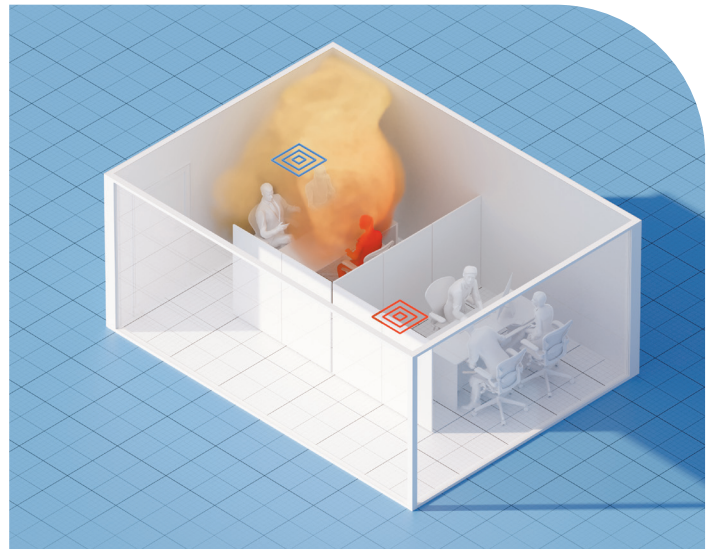
PATHOGEN	REDUCTION	TIME
Escherichia coli	99.99%	180 mins
Salmonella enterica	99.97%	180 mins
Listeria monocytogenes	98.6%	240 mins
Staphylococcus aureus	99.98%	360 mins
Vancomycin-resistant enterococcus (VRE)	99%	360 mins
Bacillus Subtilis	99.99%	48 hrs
Candida Albicans	99.99%	48 hrs
Aspergillus Niger	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

Demonstrated to make shared environments significantly safer.

Computational fluid dynamics (CFD) modeling has shown Pyure can provide a 73% reduction in the size of the cloud of infection versus ventilation alone.



3 Air changes per hour
with **ventilation only**.



3 Air changes per hour
with **ventilation and Pyure**.

↓ **73%**

When added to ventilation, Pyure can substantially reduce the risk of transmission. In addition, Pyure enables you to operate at lower air changes per hour and still lower transmission risk, thereby improving energy efficiency.

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 cost of a surgical site infection (SSI) 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

Hospital infectious disease ward

Problem

The infectious diseases ward of a teaching hospital had elevated airborne pathogen levels in patient recovery rooms. In the two weeks before initiating Pyure treatment, CFU levels for total microbes were approximately 1,000, spiking to 9,800 during an afternoon with several visitors. The hospital's goal was to reduce airborne total microbial CFU levels to below 200.



Pyure impact

Following treatment with Pyure, the hospital measured a statistically significant reduction of airborne pathogen load (p-value of 0.011). Levels dropped to below 200 within a few hours of treatment and continued to decline to 40 CFUs after 15 days.

Customer benefit

The hospital quickly reduced airborne microbial levels below its 200 CFU target and maintained levels below the target throughout the study. The expectation is that these reduced airborne pathogens levels over an extended period will reduce the risk of pathogen transmission for patients in the infectious disease ward.

Hospital intensive care unit

Problem

A hospital's intensive care unit (ICU) had elevated levels of surface-bound pathogens, including mesophilic aerobic bacteria and yeast/fungi. The hospital wanted to evaluate a means of reducing these surface pathogen levels with continuous treatment.



Pyure impact

Following treatment with Pyure portable devices, the hospital recorded a 92% reduction in mesophilic aerobic bacteria levels on surfaces and a 96% reduction in yeast and fungi counts on surfaces.

Customer benefit

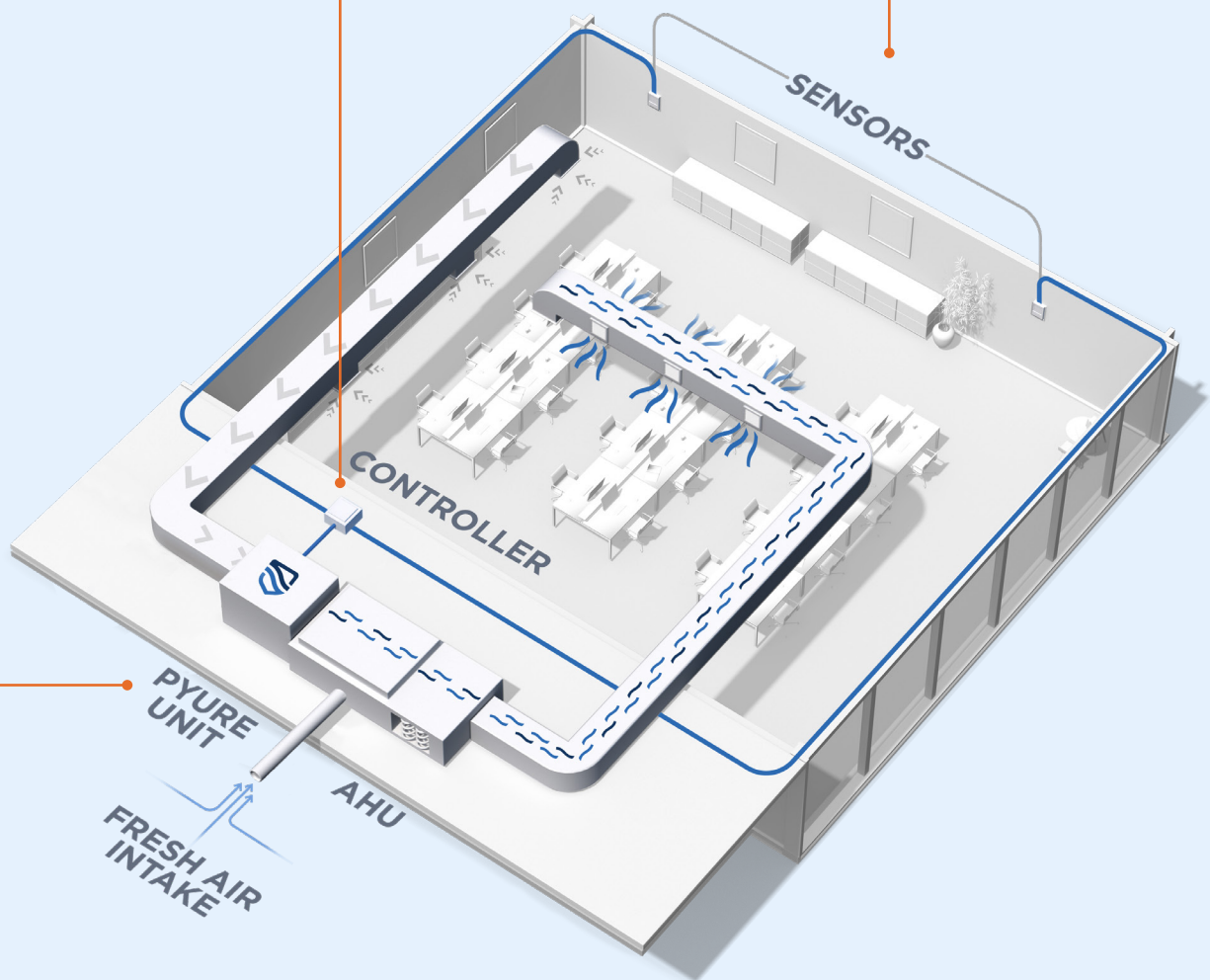
The hospital concluded that Pyure effectively reduced these microorganism levels on surfaces. The reductions were determined to be statistically significant.

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.



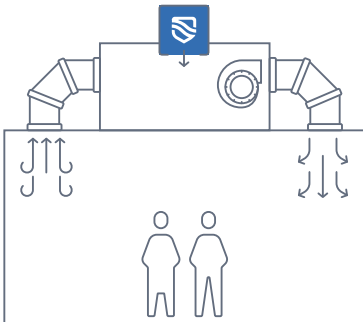
Pyure unit works with single or multiple air handling systems.

Hassle free installation and upkeep.

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

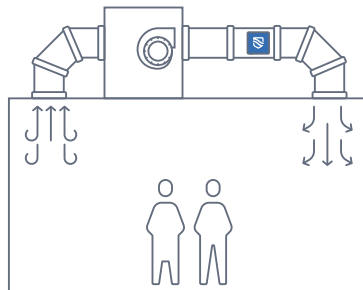
Centralized air handling

- Large rooftop units
- Large indoor units



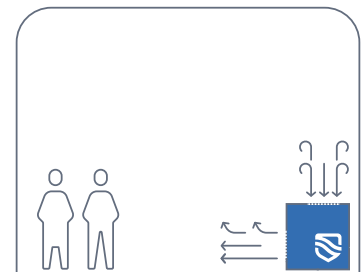
Decentralized air handling

- Smaller units inserted in ducts throughout the building
- Wall mounted units where there is no ductwork



No or limited air handling

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



Pyure makes maintenance easier.

Little impact on existing handling system

- Minimal increase in airflow resistance
- Virtually no extra wear and tear
- Marginal impact on energy consumption

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 75,000* 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



Pyure 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.

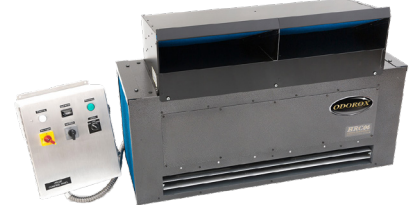
TREATMENT AREA: up to 500* sq ft



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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Who we work with:



pyure.com | [@pyureco](https://twitter.com/pyureco)

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