

**Portland Board of Education  
Building and Grounds Subcommittee Meeting.  
August 19th, 2024.**

Attending: Charles Britton, Stephanie Fragola, Bob Shea,  
Board members: Kim Nagy-Marushock, Meg Scata  
Board member absent: Dave Murphy  
Guests: Jim Keplesky, Kevin Foley of Atmos Air

Meeting called to order at 9:01 am

The agenda included a conversation about the new state requirement to monitor air quality in our school buildings, the HVAC repairs and maintenance, and the state grants for HVAC improvements that are expected in the Fall of 2024.

Bob Shea talked about what he did last year, ahead of the implementation of required monitoring and evaluating air quality in our buildings. There are complications from poor air quality related to the health of the occupants, due to an increase in viral pathogens, mold, and bacteria as well as exposure to particulate matter and dangerous chemicals. Humidification at the secondary school complex is also a known problem. Discussion is ongoing about the replacement of the 17 HVAC units. Capital funding is not available, and a plan has been to replace a few at a time. The grant would provide a reimbursement rate of 51% and would get the entire job done.

Through research, Bob narrowed down an application from ATMOS AIR that can provide a system of improving air quality, evaluation of air quality, and potential savings by reducing the amount of outside air coming into the system which results in higher heating and cooling costs. The cost of the units is approximately \$260,000, would be installed in the ductwork, and does not include necessary electrical work. Filters are good for 2 years or 18,000 hours. Servicing the units with replacement filters will be done in-house. Another benefit of adding this to our HVAC system is the cost of using smaller HVAC units due to the reduced need for the amount of incoming air.

Individual monitoring devices can be installed in classrooms, offices, hallways, and larger areas of the schools. These devices will work on our WIFI and for a monthly fee would provide written reports of the air quality in respective areas. Bob has been using a device in the schools to get baselines of air quality now.

A grant writer is also available to help the district navigate the state HVAC grant. The due date is TBD but most likely December 1.

Dr. Britton is proposing that the Board of Education learn about this HVAC system proposal and seek funding for complete replacement of all secondary school HVAC units. The cost is approximately 1.2 million. If the board agrees the best route is a referendum, we will ask the Board of Selectmen to add it to the November 5 vote.

Dr. Britton will add this as an agenda item for the September Board meeting. More information will be sent regarding specifications, research on the topic of air quality, and this particular application used by Atmos Air. The meeting continued with Bob Shea, Kim Nagy Marushock, and Meg Scata

**Update on summer work.**

Bob Shea reported that new handheld radios, with a greater distance capability, have been distributed to the schools. Two new channels have been added: a town-wide channel and an emergency channel.

A second nine-passenger van will be added to our fleet of vehicles with markings and signage as a vehicle carrying school children. The van used by the transition program is going through the same DMV process by the dealer.

Parking lots have new paint lines provided by public works using new equipment and \$600.00 worth of paint. Speed bumps will be installed at the secondary complex in the next week or so.

Fund 11 provides for regular maintenance, including the painting of classrooms and other areas. 3 classrooms and hallways were painted this summer at the secondary complex. The painting was done in-house at a huge cost savings.

LED lights have been installed in the hallways of the secondary complex. This will result in cost savings as we have seen in the other buildings where LED lights have been installed.

Bob Shea reported on roofing concerns at Valley View and Gildersleeve. Both schools have leaking roofs due to the age due to the outdated practice of laying a rubber coat with stones on top. Deterioration and shrinkage

of the rubber coating have contributed to water infiltration as well as damage to the fascia. The costs are complicated by overtime pay for cleanup, water damage, and growth of mold, as well as significant water damage to materials and resources not to mention the disruption to education and health and safety of our students and personnel. Cost is estimated at between \$5,000 and \$6,000 for each school. They are critical repairs. We risk a shutdown by the Fire Marshall because of electrical wiring and other wiring in the ceilings. Another costly repair is the chimney at Valley View. This has been an ongoing problem for several years. Rain pours in and around the chimney causing flooding in the main hallway of the school. Several solutions have been proposed including: \$120K to repair and shorten the chimney, a critical fix for \$46K or a better repair for \$65K repairs to the brickwork and relining. Repairs to the chimney remain on hold due to the school consolidation plan referendum in November.

Respectfully submitted,  
Meg Scata



550.468.8383 | 503.395.3700

# THE GLOBAL SOLUTION for Healthy Air

## Indoor Air Treatment & Energy System Proposal

Portland School District  
August 1st, 2024

## Section I: Executive Summary AtmosAir Installation for Portland School District

See air differently.



AtmosAir™ is a long-standing leader in solutions for healthier indoor air. Using active and continuous bi-polar ionization technology, real-time monitoring and sensors, AtmosAir is bringing the benefits of improved air quality to life. Proving a simple but powerful idea that air isn't invisible.

- **Over two decades of industry experience** - A market leader with a 20+ year track record of providing active air purification systems and monitoring solutions with a focus on commercial in-duct systems.
- **Energy-efficient & sustainable** - Pioneering patented technologies for safe and continuous wide-area reduction of microbial threats in occupied spaces without any disruption to day-to-day operations.

**550M+**  
21+ countries  
with AtmosAir systems installed

### Proven, Tested, & Validated

AtmosAir has executed over 100 tests in-field and in commercial labs. Over 50 peer-reviewed studies support AtmosAir's technology across all major industry verticals. AtmosAir's technology significantly reduces complex contaminants in the air, including:

- Human Coronavirus 229E (COVID-19 surrogate)
- Volatile Organic Compounds (VOCs)
- Ultrafine Particle Matter (PM<sub>10</sub>)
- Microorganisms, Bacteria, and Mold

### Benefits of the Technology

- Remove inhalable particles and pathogens – including dust, allergens, molds, VOCs, odors, airborne and surface bacteria, viruses and germs – to purify and improve indoor air quality
- Provide a comprehensive offering of air purification systems and monitoring services for commercial, industrial, and residential indoor spaces
- Promote sustainability by providing tangible energy and cost-saving benefits
- Enhanced indoor air quality protection to ensure readiness against future pandemics or other environmental events with elevated risk of airborne pathogen transmission



AtmosAir.com 503.395.3700

## Section II: Scope of Work

AtmosAir Solutions proposes installing an AtmosAir air purification system for Portland School District. AtmosAir purification and sanitation systems are designed to provide healthy indoor air quality (IAQ) by reducing viruses, odors, sports, influenza, volatile organic compounds (VOCs), germs, airborne particles, and bacteria.

The system has been designed based on specifications provided by Portland School District. See system schedule and summary below:

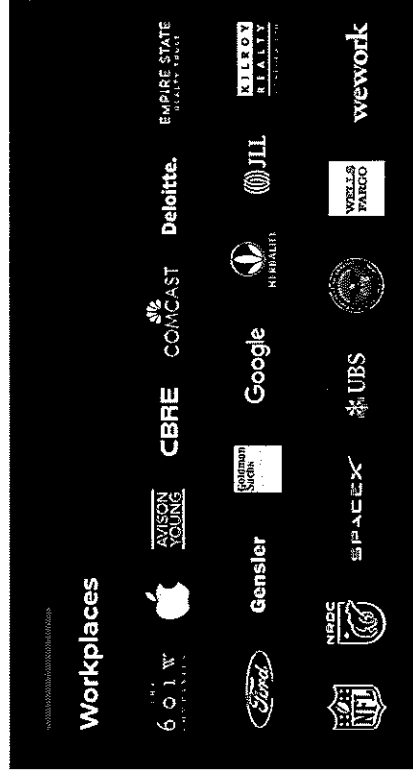
AtmosAir Active Bipolar Ionization Schedule		
AtmosAir Selection		
AtmosAir Model		Quantity
FC400		83
M1000		3
M1002		1
500EC		5
500FC		9
508FC		6

AtmosAir devices require electrical power to operate. Electrical power and associated costs shall be the responsibility of the client as well as adhering to local codes. The device power requirements are listed on the attached product submittals. If integrating AtmosAir technology to an air handling system, the air handling system will need to operate to provide airflow. AtmosAir systems are installed to operate in conjunction with the air-handling unit and operate only when supply airflow is present. Proper operation and controls of the air-handling unit is the responsibility of Portland School District. If using an AtmosAir self-contained system, Portland School District shall be responsible for the proper operation and maintenance of the unit.

### Benefits to Portland School District:

1. Improved Indoor Air Quality – Viruses, odors, bacteria, influenza, and dust will be reduced.
2. Occupant Experience – Reduced odors, overall enhanced indoor environment.
3. System Efficiency – Operating energy cost savings.
4. Sustainability – Extended life of HVAC equipment, less chilled water consumption.
5. Employee Productivity – Employees impacted by optimized, healthy, indoor air quality.

### AtmosAir Select Clients:



### Section III: 'In-Space' AtmosAware Real-Time Air Monitoring

The AtmosAware air monitoring system is designed to measure and continuously track the following indoor environmental parameters in real-time:

- Particulate Matter 2.5
- Total Volatile Organic Compounds
- Temperature
- Relative humidity
- Carbon Dioxide

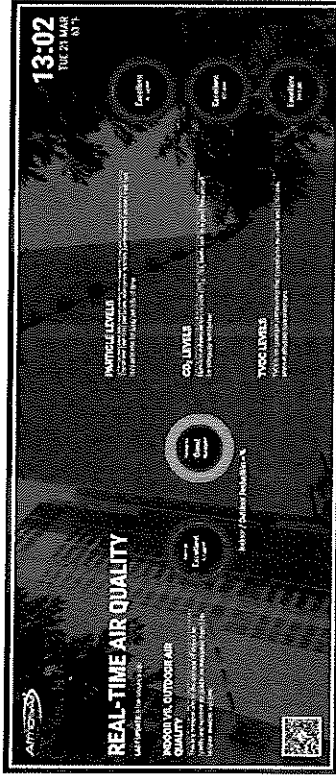
If desired, the IAQ information can be displayed on large monitors in selected areas.

AtmosAware monitoring systems are cloud-based and require an internet connection via Ethernet or Wi-Fi. The internet and electrical connections would be the responsibility of Portland School District. If selected, AtmosAir will provide full installation of the AtmosAware systems. Adjustments and calibration are available as needed.

Portland School District also has the option to subscribe to AtmosAir's Monthly Air Quality Reporting service. The monthly subscription includes a custom IAQ dashboard built specifically for Portland School District, as well as ongoing monthly IAQ reporting. Under this subscription, AtmosAir Solutions will also provide all services, calibration, and replacements for the AtmosAware Sensor cartridges.



AtmosAware Real-Time IAQ Monitors – RESET Core/Net Room Level Monitoring of TVOC, PM2.5, CO2, and more.



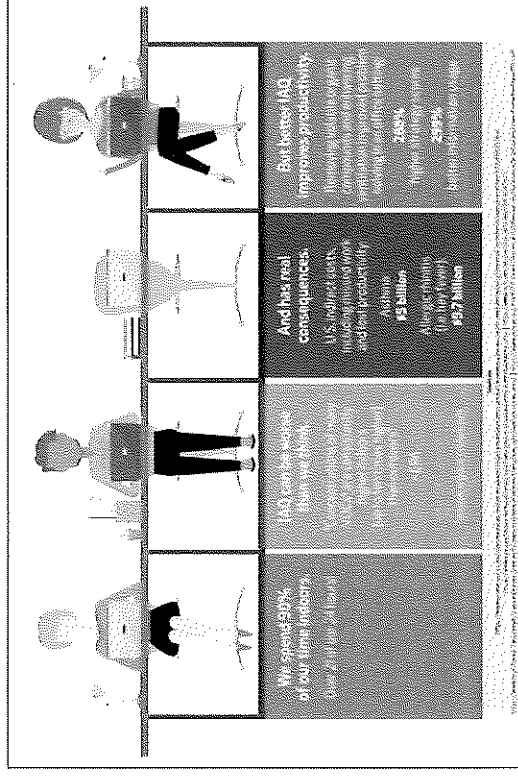
AtmosAware IAQ Dashboard Displaying Particulate Matter 2.5 (PM2.5), Carbon Dioxide (CO2), TVOC (Total Volatile Organic Compounds), Temperature, Relative Humidity, and local outdoor air quality.

## Section V: Productivity Enhancement

In 1989, the first of a series of experiments was published, revealing that raised levels of indoor air pollution in workplaces may reduce productivity. In some cases, this was found to be in addition to negative effects on the inhabitants' comfort and health.

It has now been shown beyond reasonable doubt that poor indoor air quality in buildings can decrease productivity in addition to causing visitors to express dissatisfaction. The size of the effect on most aspects of office work performance appears to be as high as a 6-9% decrease in cognitive function, the higher value being obtained in field validation studies.

See short video by Jones Lang LaSalle discussing bottom-line productivity impact – [HERE](#).



## Section IV: Energy/Sustainability Savings

AtmosAir Bi-Polar Ionization (BPI) reduces ventilation requirements and offers the ability to recycle and reuse measurably healthier indoor air.

AtmosAir takes up little space within ducts or air handling units ensuring pressure drops are not increased.

### Energy Savings:

AtmosAir energy savings estimates are modeled around the energy associated with ventilation and air conditioning (heating, cooling, dehumidifying) outside air.

With AtmosAir BPI, a 50% reduction in required ventilation can be established. During peak loads, AtmosAir allows air handlers to be set at a reduced outside air position.

### Filtration Efficiency:

Various buildings have reduced ventilation with AtmosAir and been able to reduce or remove final filters since AtmosAir is an enhanced air scrubber. Buildings have also been able to extend the life of filters significantly. Running a less restrictive filter will reduce static pressure drop and electrical energy consumption due to the system having to move air through a less restrictive setting.

In addition, a 50-percent reduction in outside air can double the life of outside-air filters. Fewer filter changes can save thousands of dollars annually.

### Additional Efficiency Benefits of AtmosAir to Portland School District:

- Sustainability Certifications. AtmosAir can contribute up to 14+ LEED points.
- Reduced corrosion. Extended mechanical-equipment and ductwork life.

Section VI: Fee Schedule

AtmosAir costs:

Total Cost: \$252,310.00 plus tax, if applicable.\*

AtmosAir Costs - Portland School District		
AtmosAir System	Qty	Cost per System
AtmosAir 508FC	6	\$7,195.00
AtmosAir M1002	1	\$2,095.00
AtmosAir M1000	3	\$1,795.00
AtmosAir FC400	83	\$1,245.00
AtmosAir 500EC	5	\$6,345.00
AtmosAir 500FC	9	\$6,625.00
AtmosAware	5	\$1,395.00
Subtotal		\$252,310.00
Total		\$252,310.00

\*This quote does not include, electrical, freight, internet, and controls cost

Terms of Payment:

50% payment due upon signature of contract. 50% payment due upon completion of installation.

EQUIPMENT AND SERVICES

**AtmosAware Monthly Air Quality Reporting:** The optional AtmosAware Monthly Air Quality Reporting subscription service includes a custom IAQ dashboard, ongoing monthly IAQ reporting, mobile app access and lobby view display. Monthly Fee: \$50 per monitor.

MAINTENANCE SCHEDULE AND COSTS

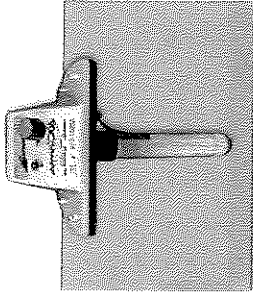
The AtmosAir system improves indoor air quality using tubes that clean the air by emitting bi-polar ions. AtmosAir tubes should be replaced after twenty-four (24) months.

The AtmosAware Air Quality Monitoring system tracks air quality parameters in real-time using sensor cartridges. Each system contains one (1) pair of sensor cartridges which should be replaced every twenty-four (24) months. If selected, AtmosAir Solutions will supply new sensors for each system.

SYSTEM WARRANTY

Each AtmosAir-system installation includes a full two-year parts and labor warranty. This warranty does not include electrical service failures, HVAC system failures, changes in structure or HVAC system design, damages outside normal wear.

PRODUCT SUBMITTAL  
Materhorn 1002



**APPLICATION**

The Materhorn 1002 ionization system is intended to be mounted in the supply duct or at the end of a heating, cooling, or ventilating system. The unit is intended to operate only when air flow is present, thus, power to the ionization unit should be interlocked with fan operation, or controlled via an air pressure switch. The size and number of ionization systems is dependent upon the airflow, size of the space, and severity of the pollution and ozone. Ionization can be adjusted with a 5-step knob.  
**Optional:** Air Pressure Switch, Mounting Bracket, Timer, Remote Monitoring Panel

Figure 1

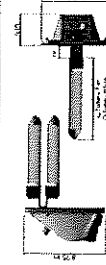
Tube #	Tube #	Tube #	Tube #	Tube #	Tube #
C (2)	2092	0.0069	2.00	34.00	
D (2)	3000	0.0241	6.00	24.00	
E (2)	4000	0.0482	12.00	24.00	
F (2)	5000	0.0663	17.00	27.00	

Figure 2



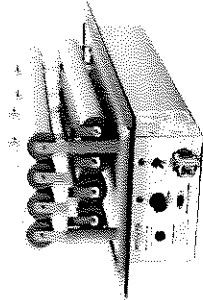
**SPECIFICATIONS**

<b>General Product Information</b>	
Air Flow Rating	Up to 2000 CFM
Pressure Drop	See Figure 1
Housing Material	Flame-Rated, High Impact ABS Underwriters Laboratories, Inc. pending UL listing, UL 94V-0, 33742, Energy Star Certified.
Weight	6.0 lbs.
Max Operation Temp.	200°F (93°C)
<b>Electrical</b>	
Rated Voltage	115 VAC
Frequency	50/60 Hz
Power Consumption	6 Watts
Current Draw	37 mA
Internal Fuse	1.0 Amp 50T Glass Tube x 20mm
Field Electrical Connection	Field Electrical Connection, 3-Wire to Jct. Box or Country Specific Cord-Set
<b>Installation Tube</b>	
Material	Mono-Core Composite
Max Quantity	Two (2)
Compatible Tube Size	C, D, E, & F
Estimated Tube Life	2 Years or 75,000 Hours
<b>Dimensions</b>	
8.75" x 8.5" x 4"	See Figure 2 for more details
<b>Approvals</b>	
Underwriters Laboratories, Inc. pending as plenum-rated per UL 1955, 907; Fig # 33742, Energy Star Certified.	



AtmosAir Solutions  
1000 NE 10th St  
Portland, OR 97232  
Phone: 503.255.2200  
Fax: 503.255.2201  
www.atmosair.com

# PRODUCT SUBMITTAL



## SPECIFICATIONS

### General Product Information

Capacity	Up to 2000 CFM
Flowrate (CFM)	750 CFM @ 10" static pressure
Pressure Drop	0.15" @ 1000 CFM
Housing Material	Aluminum
Weight	10.30 kg (22.7 lbs)
Max. Operation Temp.	55.0°C (130°F)

### Electrical

Rated Voltage	110/230 VAC or 220/240 VAC
Frequency	50/60 Hz
Power Consumption	55 Watts
Current Draw	0.5 Amps (500 mA)
Fuse	T-500mA, Class 5mm x 20mm

### Field Electrical Connection

Terminals for 2 Wires to Junction Box  
 4-Wire Core Composite, Splices, Straps

### Max. Quantity

Up to Eight (8)  
 F (500 8mm) (27)

### Dimensions

1500mm (49.21") High

### Approvals

CE and Intertek ETL to UL Standards 955, 997, 907A, CSA 22.2 Heating & Cooling Equipment, Electrostatic Air Cleaners, Commercial/Industrial Indoor Air Quality Systems

## APPLICATION

The Atmosair IONIC Ionization System is designed to be mounted in the supply air duct or an existing heating, cooling or ventilation system. The unit produces bipolar ions which are delivered over the air duct. Power to the unit can be controlled with an optional air pressure differential switch or interlocked with AHU fan operation. Interlock the power delivered to the unit (either 1st or 2nd stage) ionization intensity can be adjusted with a hand-keep knob on the unit. Power to the unit can be turned off at the unit or a quick disconnect at the power cord.

## Optional/Available

- Air Pressure Switch
- Mounting Bracket
- Timer
- Remote-Monitoring Panel
- Remote Switch and Indicator Light
- Remote Indicator Light Only
- IP66

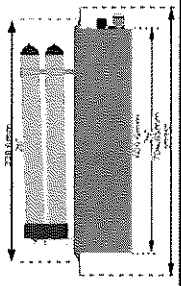
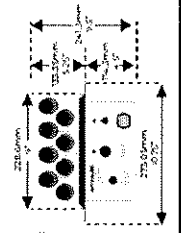


Figure 2  
Dust Collector Mounting

Atmosair Solutions™  
 C-110-1-150

Atmosair Solutions™  
 C-110-1-150

# PRODUCT SUBMITTAL



## SPECIFICATIONS

### General Product Information

Air Flow Rating	Up to 2000 CFM
Pressure Drop	See Figure 1
Housing Material	Flame-Retard, High Impact ABS, meeting UL 94V-0, 33742, Energy Star Certified
Weight	6.0 lbs
Max. Operation Temp.	200°F (-93°C)

### Electrical

Rated Voltage	115 - 120 VAC
Frequency	50/60 Hz
Power Consumption	6 Watts
Current Draw	27 mA
Internal Fuse	1.0 Amp GFT Class 5mm x 20mm
Field Electrical Connection	Field Electrical Connection; 3-Wire to Jct. Box or Country Specific Cord Set

### Installation Tube

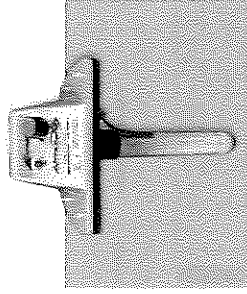
Material	Mono-Core Composite
Max. Quantity	Up to Two (2)
Compatible Tube Sizes	C, D, E & F
Formatted Tube Life	2 Years or 17,000 Hours

### Dimensions

0.75" x 0.7" x 4"  
 See Figure 2 for more details

### Approvals

UL 955, 997, 907A, CSA 22.2 Heating & Cooling Equipment, Electrostatic Air Cleaners, Commercial/Industrial Indoor Air Quality Systems



## APPLICATION

The Atmosair 1000 Ionization System is intended to be mounted in the supply duct or in a number of a heating, cooling or ventilation system. The unit is intended to operate only when air flow is present, thus power to the ionization unit should be interlocked with fan operation or controlled via an air pressure switch. The size and number of ionization systems is dependent upon the airflow rate of the space, and severity of the pollution and odors ionization can be utilized with a 5-ster knob.

## Optional/Air Pressure Switch, Mounting Bracket, Timer, Remote Monitoring Panel

Tube Size	Max. Quantity	Formatted Tube Life	Material	Weight	Dimensions (H x W x D)
C	10	2 Years or 17,000 Hours	Mono-Core Composite	0.10 lbs	0.75" x 0.7" x 4"
D	10	2 Years or 17,000 Hours	Mono-Core Composite	0.10 lbs	0.75" x 0.7" x 4"
E	10	2 Years or 17,000 Hours	Mono-Core Composite	0.10 lbs	0.75" x 0.7" x 4"
F	10	2 Years or 17,000 Hours	Mono-Core Composite	0.10 lbs	0.75" x 0.7" x 4"

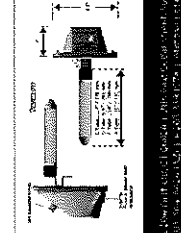
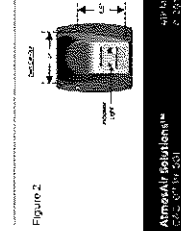


Figure 1  
Figure 2

Atmosair Solutions™  
 C-110-1-150

Atmosair Solutions™  
 C-110-1-150



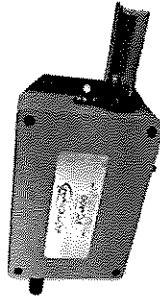
# PRODUCT SUBMITTAL

3000EC

Atmosair®

## SPECIFICATIONS

General Product Information	
Air Flow Capacity	Up to 1,400 CFM
Pressure Drop	0.02mm ID (0.01") VAC (0.4) Pascals
Mounting Material	ABS (UL94V-0)
Weight	0.32 kg (0.70 lbs)
Max Operation Temp.	54.4 °C (130 °F)
Electrical	
Rated Voltage	24 VAC or 100-250 VAC (Auto-Switch)
Frequency	50/60 Hz
Internal Voltage	12 VDC
Power Consumption	7.60 Watts
Current Draw	0.1 Amps (600 mA)
Fuse	T 1000mA Glass 5mm x 20mm
Field Electrical Connection	24 VAC or 100-250 VAC (Auto-Switch)
Ionization Tube Specs (I-CC)	
Material	Class, Stainless Steel
Max Quantity	One (1)
Size	8 (19.2mm) (P)
Estimated Tube Life	17,600 Hours (Two Years)
Approvals	
UL, VDE and Intertek ETL to UL Standards 209B, 1992, 967, 807A, CE and RoHS Compliant, Electrosafe, Commercial/Industrial Indoor Air Quality, Electrostatic Air Cleaners, Commercial/Industrial Indoor Air Quality.	



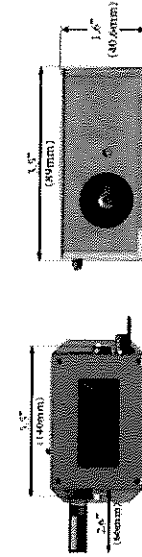
## APPLICATION

The Atmosair FC-400 ionization system is designed to be mounted in the supply discharge in parallel air handling systems such as fan coil, heat pump and other energy saving systems.

This system can be integrated on an OEH based or a retrofit package as also provided. The unit will be calibrated at the factory per Atmosair recommendation to attain ion level readings of between 300 and 1,500 ions/cm<sup>3</sup>.

- Optional/Available**
- Air Switch
  - 2 (2.0mm) Two Wire Field Wiring Kit
  - BDC

Figure 2



Atmosair Solutions™  
Class 3000EC

Atmosair Solutions™  
Class 3000EC

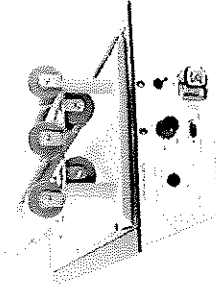
# PRODUCT SUBMITTAL

3000EC

Atmosair®

## SPECIFICATIONS

General Product Information	
Air Flow Capacity	Up to 4,000 CFM
Pressure Drop	Minimal
Mounting Material	22 Gauge Powder-Coated Steel
Weight	6.90 kg (15 lbs)
Max Operation Temp.	65 °C (150 °F)
Electrical	
Rated Voltage	10/20 VAC or 20/240 VAC
Frequency	50/60 Hz
Power Consumption	32 Watts
Current Draw	0.6 Amps (600 mA)
Fuse	T 1000mA Glass 5mm x 20mm
Field Electrical Connection	Home 2-Prong or 3-Wire to Junction Box
Ionization Tube	
Material	Micro-Core Composite, Stainless Steel
Max Quantity	Up to Five (5)
Size	8 (19.54mm) (M)
Estimated Tube Life	17,600 Hours (Two Years)
Approvals	
CE and Intertek ETL to UL Standards 1995, 967, 807A, CSA 22.2 Heating & Cooling Equipment, Electrostatic Air Cleaners, Commercial/Industrial Indoor Air Quality Systems.	



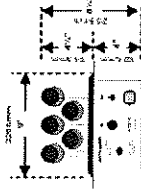
## APPLICATION

The Atmosair 3000EC ionization system is designed to be mounted in the supply air duct or air handling system of a heating, cooling or ventilation system. The unit produces bipolar ions when airflow is delivered over the ion tubes. Power to the unit can be controlled with an optional air pressure differential switch or interlocked with HVAC fan operation, provided the power delivered to the unit does not exceed its rated voltage. Ionization intensity can be adjusted with a five-step knob on the unit. Power to the unit can be turned off at the unit or a quick disconnect at the power cord.

## Optional/Available

- Air Pressure Switch
- Mounting Bracket
- Timer
- Remote Monitoring Panel
- Remote Ion Switch and Indicator Light
- Remote Indicator Light Only
- I-PS


Figure 2



Atmosair Solutions™  
Class 3000EC

Atmosair Solutions™  
Class 3000EC

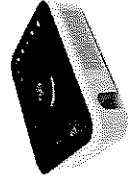





### AtmosAware – SenseEdge


Air quality monitor made for healthy buildings

Know what is in your air, instantly and accurately. The SenseEdge offers 24/7, real-time monitoring of you indoor air quality. Color-coded displays and indices of various pollutants allow for quick, at-a-glance readings.

### Optimize building operations

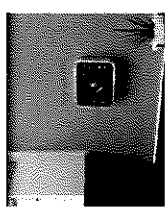
Maximize performance of your interior's filtration and HVAC system with easy-to-export air quality data. Compare and analyze historical data for healthier building management.



### Privacy is a priority

The SenseEdge has been carefully designed to offer maximum security with:

- End-to-end encryption
- Industry standard SSL/TLS for transport security
- Cloud-based authentication
- Password-enabled ID

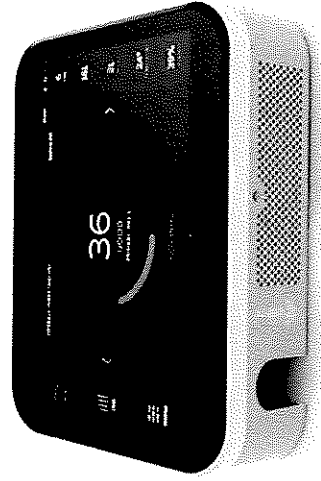


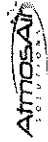
Designed to fit anywhere

## Technical Specifications <sup>1</sup>

<b>CO<sub>2</sub> Sensor</b>	<b>Accuracy</b> ±5%
<b>Sensor type</b> Non-dispersive Infrared	<b>Resolution</b> 1%
<b>Accuracy</b> <sup>2,3</sup> ±3% ±50ppm	<b>KM-100 Module</b> <sup>6</sup> PM <sub>1,2.5</sub>
<b>Resolution</b> 1ppm	<b>Sensor Type</b> Light scattering (350nm)
<b>Range</b> <sup>4</sup> 400-2000ppm	<b>Precision</b> <sup>9,10</sup> ±10% (<30µg/m <sup>3</sup> ; ±3µg/m <sup>3</sup> )
<b>KM-102 Module</b> <sup>5</sup> TVOC	<b>Resolution</b> 1µg/m <sup>3</sup>
<b>Sensor Type</b> MOS	<b>Range</b> 1-1000µg/m <sup>3</sup>
<b>Precision</b> <sup>6,7</sup> ±15%	<b>Measurable particle size</b> 0.3-2.5µm
<b>Resolution</b> 1ppb	<b>Connection</b> Wi-Fi (2.4Ghz), Ethernet Support for hidden SSIDs, CaptivePortal and proxy servers
<b>Sensitivity</b> 125ppb	<b>Data logging</b> 8GB of on-board memory (>50,000,000 data points) >100 years at 1 minute interval
<b>Temperature Range</b> -20 - 100°C	<b>External storage</b> Cloud-based, Micro-SD card, USB
<b>Accuracy</b> ±1°C	<b>Log interval</b> 1 minute, 1 hour, 1 day
<b>Resolution</b> 1°C	<b>Screen</b> 7" full colour touchscreen
<b>Relative Humidity Range</b> 0-95%	

<b>Battery</b> 5200mAh (5 hours with screen powered on, 11 hours with screen powered off)	<b>Operational humidity</b> 5 to 95% RH, non-condensing
<b>Input voltage</b> DC - 5V	<b>Physical size</b> 184 x 146 x 48mm (7.2 x 5.7 x 1.9in.)
<b>Input current</b> 1.8A	<b>Product weight</b> 800g (1.76lb)
<b>Operational temperature</b> <sup>11</sup> 0 - 50°C	
<b>Storage temperature</b> -20 - 50°C	





AtmosAware Air Quality Reporting

### Gensler Weekly Report 2018/09/17 - 2018/09/23

We hope you had a good weekend! Here's a summary of what happened in your environment last week.

#### Gensler at One Museum Place

6 Nodes

PM2.5	4.0 $\mu\text{g}/\text{m}^3$ Indoor avg.	Very Good Level	25.0 $\mu\text{g}/\text{m}^3$ Outdoor avg.	84.0 % Reduction
PM10	4.0 $\mu\text{g}/\text{m}^3$ Indoor avg.	Very Good Level		
TVOC	0.13 $\text{mg}/\text{m}^3$ Indoor avg.	Very Good Level		
CO2	546 ppm Indoor avg.	Very Good Level		

The outdoor station used as reference for this location is Jingrenjiancezhan (静人监测站). Data coverage is 52%. We have received 9922 out of 18900 data points possible.