BRAHM®

COLLECTOR SERIES

CLEAN AIR AMERICA, INC.

Working together for a crystal-clean production line

#1 in Welding Smoke, Oil Mist & Oil Smoke Removal
Best in Class for Innovative Products and Services

PROUDLY MADE IN THE USA

7 Superior Drive, Rome, GA 30161 | (706) 291-1700 | (866) 665-1829
www.clean-air.com | sales@clean-air.com

BRAHM® SERIES by CLEAN AIR AMERICA, INC.

Why Clean Air America?

CLEAN AIR AMERICA, INC.™

Clean Air America is a manufacturer of a complete line of industrial air filtration systems, perfect for welding smoke, fumes, oils and dust. Customized solutions are created by our expert design engineers and manufacturing professionals, so that even in heavy production you can have air that is "crystal clear".

TÜV ISO 9001

UL 508A:2005 CAN CSA C22.2 No. 14:2005

With collectors ranging in size from 1 filter to 54 filters, the Clean Air BRAHM® Series is the ideal solution for your air filtration needs.

The Clean Air **BRAHM®** Series combines the most efficient features of our cartridge collector products to offer the most versatile, compact, and powerful cartridge collector series on the market.

Designed as a plug-and-play collector system, the Clean Air **BRAHM®** Series offers the fastest pulsing of any cartridge collectors available. Driven by supply pressure, timers have been eliminated and the collector offers up to 80% faster pulsing than previous industry models.

Up to

40%

reduction in can velocity over previous models

The Clean Air **BRAHM®** Series is ideal for production applications including welding, grinding, sanding, laser/plasma cutting dust & other dusts.

Clean Air BRAHM® Series Benefits:

- Crystal-clean air, even in high-production environments
- Increased filter life with decreased can velocity
- Lower TCO with both energy savings on electricity, filter usage, and compressed air

Clean Air BRAHM® Series Features

- Strong 10 & 12 gauge welded steel construction
- Quick access filter door, motor and valve compartment door, and clamping system
- Vertically-positioned filters with bottom-initiated pulsing
- Plug and play connectivity

Clean Air BRAHM® Series Options

- **Rotary air lock**, ideal in pollution-control applications
- Flexible Bulk Container Holder designed to hold super sack/flexible bulk container (with stands over 36" tall)
- **Economizer** to control automatic start/stop
- **Silencer** for additional noise reduction
- Maintenance platform for easy access to filters and maintenance points

- **Fire Suppression System**
- Spark Detector and water extinguisher kit
- Hopper or dust bin/trolley
- Auto Filter Precoating (Lime Feeder)
- Drum Monitoring
- VPN Access
- Weather-proofing applications
- Various height stands to elevate unit and provide ddditional floor space
- **EVO™ Controller Panel** for pulse cleaning, maximum energy efficiency and **Speed Pulsing**
- **Bypass Sensor** allows unit to detect filter bypass issues

Key Components of the Clean Air BRAHM® Series

• **Filters:** flame retardant cartridge filters capture the smoke or dust particles cleaning it to well below OSHA and international air quality standards.

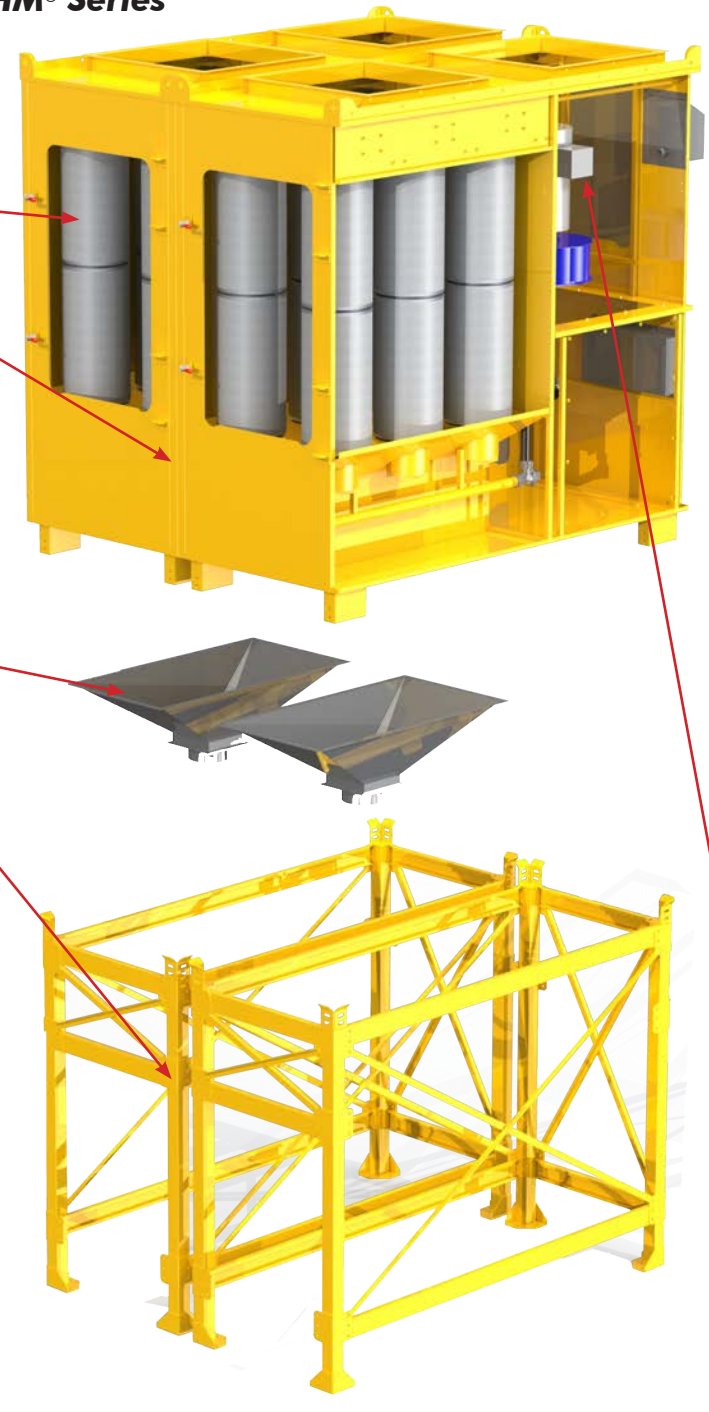
• **Construction:** Constructed of heavy duty 10 and 12 gauge steel, the body of the collector is designed to hold up to the rigours of a 24/7 manufacturing facility. Internal noise abatement added to dampen noise. Weatherproofing options can be added.

• **Hopper:** (Optional) The hopper attaches to the bottom of the unit and funnels the filtered particles to an easy to clean dust bin.

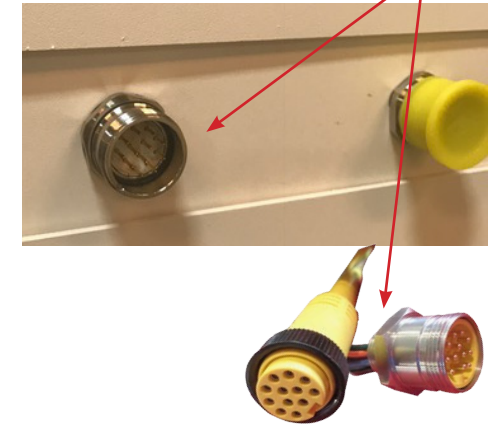
• **Stand:** (Optional) Legs allow the unit to be placed off the floor providing a storage area or for the unit to be placed above an existing unit.

• **VFD:** (Optional) Designed to provide you with a "soft start" feature and motor speed controller, the VFD slowly starts the motor upon start up and only uses the power needed for proper filtration.

• **Dust Bin:** (Optional) Filtered particles are funnelled down to the dust bin, allowing for easy removal of the dust and smoke particles.



• **Quick Connects:** "Plug and Play" setup requires no expertise for installation or connections.



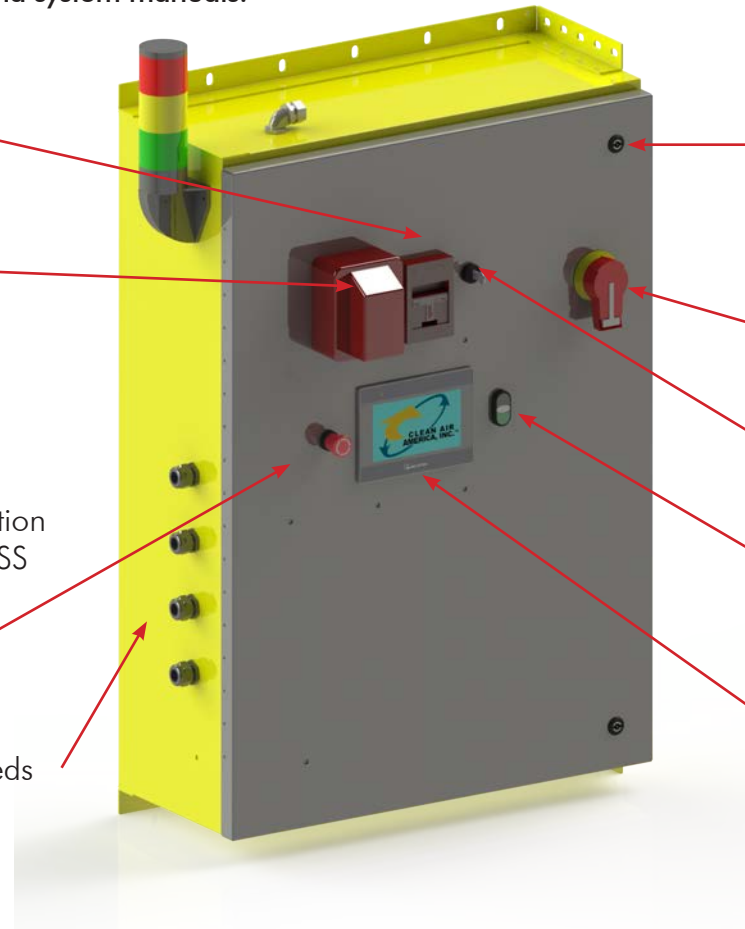
• **Motor/Blower:** Direct drive motor and blowers are used to decrease the amount of wear and tear on the parts and decrease energy and maintenance costs.

Upgraded Technology of the Clean Air BRAHM® Series

The **Clean Air EVO™ Panel** is a custom Clean Air America HMI/PLC panel that combines a VFD along with human interface technology that allows monitoring of the system's static pressure, fan amperage, RPM and HP, and cleaning system performance, as well as fine tune conditions to maximize performance.

- The **Clean Air EVO™ Panel** can control multiple systems from a single location, giving maintenance personnel information on filter status.
- The **Clean Air EVO™ Panel** can monitor multiple Clean Air EVO series machines from a single screen (up to 50 units) and send email alert for emergencies and dirty filters.
- The **Clean Air EVO™ Panel** controls speed pulsing, which is nearly 80% faster than the industry's standard filter pulsing. It utilizes proprietary controller algorithms for the self-cleaning system, and features remote monitoring for run time scheduling, status logging, built-in diagnostics, and system manuals.

The Clean Air EVO™ Panel is the wise way to control your machine setup.



Fire Pull: Manual fire pull to manually trigger the FS

Fire Horn/Strobe: Visible and audible alarm to indicate fire detection

Status / Stack Light: Visible confirmation of how the unit is running:
Green - normal/no errors
Yellow = Unit is running but needs attention
Red = Unit is stopped / i.e. VFD error, FSS

Emergency Switch: Emergency button

Quick Connect: Quick connect conduit feeds

Panel Locks: Keeps the panel secure and closed from unauthorized access

Disconnect Switch: Completely disengages power supply to electrical panel

Fire Key Switch: Key switch to disable/enable FSS

Start/Stop: Push-button power switch with light indicator

HMI: touch-screen interface that allows operator to easily connect, monitor, and control process

Upgraded Technology of the Clean Air BRAHM® Series

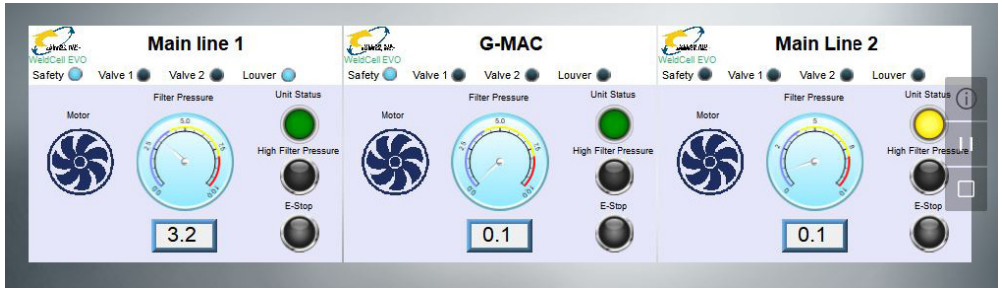
• Provides built-in **Remote Monitoring** for computers within the same network and optional VPN providing access to the unit from a computer in the maintenance office, at home, or even on the phone. The unit's complete status is displayed, including running state, fire suppression status, and filter pressure levels.

• **Scheduling -** Standard on the **Clean Air EVO™ Panel**, units can be set to run at scheduled intervals. Setups include daily scheduling (up to 3 shifts) including automatic starting and stopping. Simply set start and stop times based on the day of the week and time, and the system will run automatically.

• **VFD Error Alert** - if a VFD fault occurs, user will be notified on the screen of the Clean Air EVO™ Panel

• **User Manual on HMI - Clean Air BRAHM®** Series user manuals are accessible from a flash drive attached to the HMI. The manuals for the VFD, the **Clean Air EVO™ Panel**, and the unit can be accessed directly from the screen - no need to keep up with hard copies or digital copies on disc. Simply call it up on the screen, and the information is there!

• ***Self Cleaning System* -** The **Clean Air EVO™ Panel** is designed for optimum automatic pulse cleaning and maximized energy efficiency. The unit features multiple distinct differential pressure sensors, which measure across the filters to determine loading on the filters. Online cleaning is performed while the unit is running, with the blower still moving air throughout the unit. Offline cleaning is performed when the unit is stopped with no air flow. Offline cleaning is always more effective as the cleaning pulse does not have to compete with the air flow. Working from the differential pressure instead of a timer, the unit cannot initiate the offline cleaning cycle too early, which eliminates the potential waste of compressed air and effectiveness. An automatic cleaning algorithm determines when to clean based on the differential pressure across the filters. When the filters begin to load more significantly, the system will lose additional flow which creates higher pressure drops. These drops demand proportionately more power than the initial loading. An online cleaning cycle is initiated at these higher pressure levels to remove the looser dust. When combined with a VFD, this translates to lower motor speeds, less energy, and reduced running costs.



Reduced Can Velocity - The new **Clean Air BRAHM® Series** collection features interior velocity that has been reduced by up to 40%. Can Velocity is the

Reduce maintenance costs by knowing what is needed. Guesswork is eliminated!

Upgraded Technology of the Clean Air BRAHM® Series

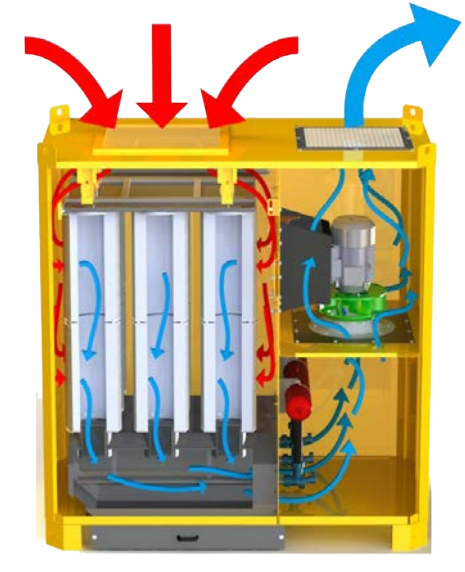
maximum velocity across the face of the filter, and by lowering the speeds inside the unit, more particulate begins to fall out. Particles in the air are kept aloft by the buoyancy of the particle which is partially driven by the air speed. When the air is slowed, the energy is reduced along with the buoyancy. By lowering the speed after the air has entered the collector, the particulate falls out of the air stream before reaching the filter. ***More particulate than ever can pass by the filter and right into the hopper, extending filter life and reducing maintenance costs.***

Enhanced Down Flow Technology - The **Clean Air BRAHM® Series** utilizes a unique design that incorporates a true downward airflow pattern within the cabinet. This design is achieved with a customized clean air duct plenum system (CAD) that supports the cartridge filter elements, acts as the clean air plenum, and in turn houses the advanced technology cleaning system. The clean air duct plenums can be provided in single or multiple arrangements that allow for cell-mounted units or larger, custom centralized units. This arrangement promotes extended filter life with efficient airflow patterns within the collector cabinet. Optimal spacing of the CAD plenums ensure the lowest can velocity within the collector cabinet, eliminates re-entrainment, and allows us to provide filter life that is up to 50% higher over competitor vertical cartridge filter systems, and up to 75% longer than competitor horizontal based cartridge filter systems. This technology helps ensure that the **Clean Air BRAHM® Series** provides the lowest total cost of ownership on the market.

Up to

40%

reduction in can velocity over previous models



DOWNFLOW TECHNOLOGY

Additional Options for the Clean Air BRAHM® Series

Bypass Sensor (with EVO™ Panel only) - Particulate sensors have been placed after the filters, allowing the unit to detect if smoke, dust, or other contaminates are bypassing the filters. If this bypass is detected, an alarm is set off to denote a need to fix the issue.

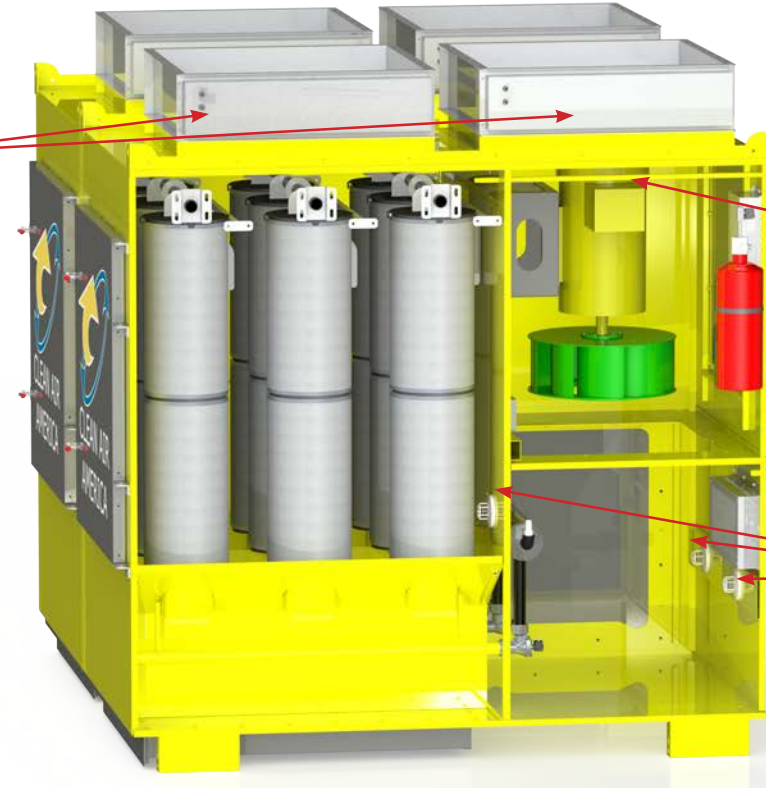
Economizer - Any **Clean Air BRAHM®** unit can be set up to start and stop based on a connected machine. A dry contact on an existing machine (laser, plasma, welding robot) can be used to send a signal back to the controller. The contact must be set to close when the machine starts and open when the machine stops. The controller has a timing circuit so the filtration unit starts when the machine starts, and has a delayed stop when the machine stops. In the case of welding, both manual or robotic, a current switch can be attached to the welding lead which provides this dry contact to pass this signal.

Fire Suppression System (FSS) (Optional) - A combination of smoke and heat sensors have been placed throughout the unit. Smoke sensors provide an early warning, are able to stop the motors, lock out pulsing, and stop the air flow by closing louvers on both the intake and exhaust of the unit. Suppression agent is not dispensed unless the fire has been verified by the heat sensors. This new agent has been tested and shown to be more effective than any other method available. Canisters can be stocked with no risk of leak or depressurization of time. The new canisters are also internal and pre-installed on the units; meaning, no additional installation is needed after shipping. On **Variable Frequency Drive (VFD) based units**, the Fire Suppression System (FSS) is tied in with the drive. This allows the system to provide a quick and controlled stop of the motors and blowers as quickly as possible. **For additional coverage**, sprinkler heads have been installed on all units with fire suppression. These can be hooked up by the end customer as an additional level of protection to flood the filter compartment. These work even if all power has been removed from the unit.

Fire Suppression System

Intake and Exhaust Louvers: if smoke or fire is detected, both louvers are closed, eliminating oxygen flow into the unit.

*****Adds 10" to height of single-module units***



Piping for Sprinkler Heads: functional even if all power has been removed from the unit, and can be connected by the end-user

Smoke / Heat Sensors: provide early warnings, can stop the motors, lock out pulsing, and stop air flow

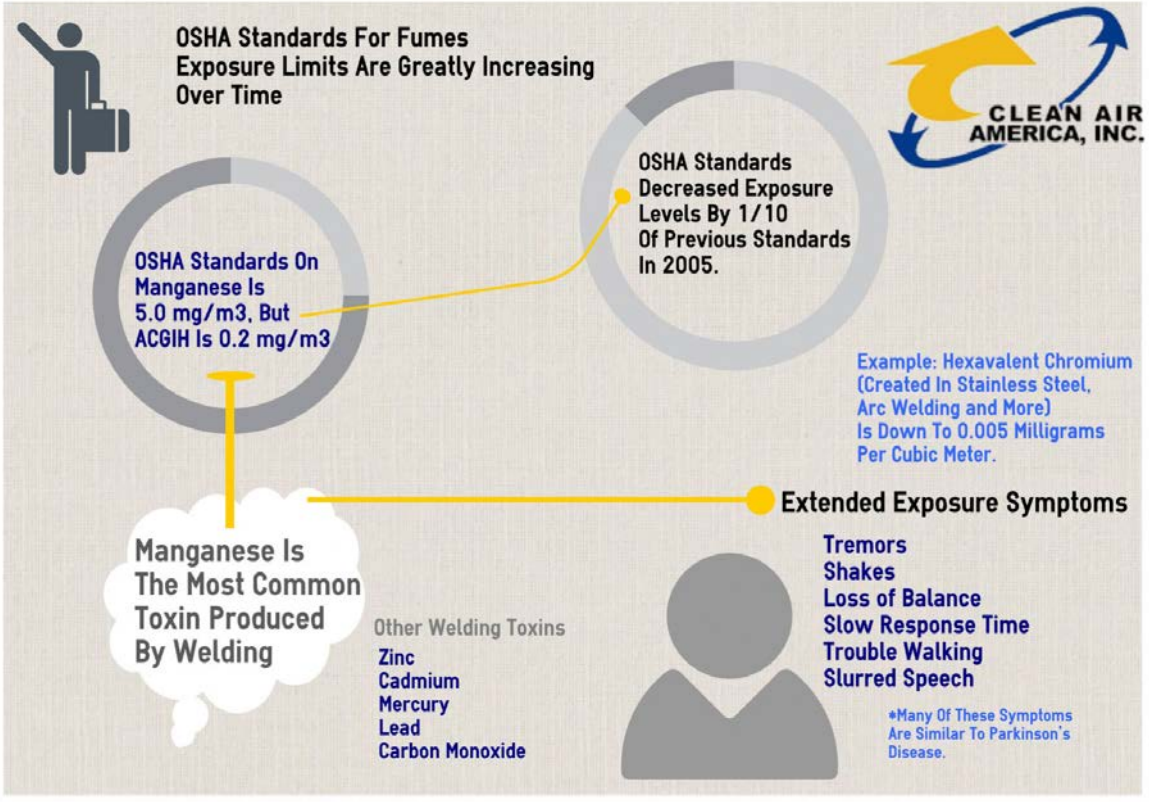
Applications that benefit from Clean Air BRAHM® Collectors include:

Application	Welding	Grinding	Plasma & Laser Cutting	Blasting
Hazards	Metallic Oxides, Silicates, Fluorides, Hexavalent Chromium	Aluminum, Copper	Hexavalent Chromium	Toxic Lead Paint, Silicates, Mineral Dusts
Airborne Concerns	Very fine, but solid particulates; Gases, Smoke	Very fine, but solid particulates	Gases	Solid Particulates

In the manufacturing environment, indoor air is often two-to-five times more polluted than outdoor air, and it can be up to 1,000 times as dirty. The EPA estimates that on every single day, most workers are exposed to indoor air contaminants than can lead to serious health problems, respiratory ailments, fatigue, cancer and headaches.

Proper ventilation is a necessity when dealing with the dangerous particulates and gases produced by manufacturing processes.

OSHA Fume Exposure Standards



The **Clean Air BRAHM®** Cartridge collectors are highly efficient and utilize vertical filters. Filters positioned vertically with pulsing from the bottom utilize an enhanced Down-Flow technology that provides crystal clean air even in high production environments. Vertical filter cartridges provide more efficient pulsing of dust and particulate, thus eliminating uneven dust loading associated with horizontally mounted cartridges.

Adequate ventilation is a key to controlling exposure to smoke and dust particulates in the production area. Using Clean Air America's industry-leading air filtration solutions keeps the production and welding areas free from harmful smoke, dust, and even oil mist. Workers breathe crystal clean air, which leads to them protecting their health.

BRAHM® SERIES by CLEAN AIR AMERICA, INC.

The environment inside manufacturing facilities is heavily regulated by OSHA and federal emissions regulations. Is your plant in compliance?

Particles created during the manufacturing process (smoke, dust, etc.) can be extremely hazardous to your employee's health; also, the decrease in life span of your equipment can cause unexpected and costly repairs.

The Clean Air **BRAHM®** Collector Series a line of highly effective cartridge-based collector systems designed with efficiency and energy savings in mind. With units ranging from 1 filters to 54, Clean Air America can provide a system that provides you with the best air-to-cloth ratio, giving you a system that not only cleans your air but saves you on maintenance costs.

Clean Air BRAHM® Filters

Down Flow Technology, combined with an effective pulsing system, gives even the standard filter a longer filter life vs. competitors. But, you can achieve even greater filter life by upgrading to a NanoFiber or PTFE filter. These filters have a unique filter media that allows for easier pulsing off of particulate, greatly increasing filter life compared to the standard filter.

The standard 80/20 filter used by Clean Air America is a premium blend of flame retardant cellulose/polyester blend media. This filter helps ensure longer filter life, cleaner air, and increased savings on replacement costs over the lifetime of the unit.

Filter Media:	80/20% polyester, flame retardant
Inner Cage:	Galvanized expanded metal
Outer Support:	2 outer support bands
Max. Operating	180 Degrees Fahrenheit
Temp:	12.75" OD X 8.38" ID x 26" H
Filter Size:	226 sq. ft.
Efficiency:	MERV-11

MERV is a measure of a filter efficiency over a range of particle sizes. Higher MERV means greater efficiency. MERV ratings range from 1-16.

FILTER UPGRADE: The nanofiber filter is an 80/20 cellulose/polyester media filter that is enhanced with a nanofiber membrane around the filter media. The nanofiber membrane gives the media excellent filtration efficiency and dust release capabilities. This filter helps ensure longer filter life, cleaner air, and increased savings on replacement costs over the lifetime of the unit.

Filter Media:	Nanofiber, fire retardant
Inner Cage:	Galvanized expanded metal, 72% open
Outer Support:	2 outer support bands
Max. Operating	180 Degrees Fahrenheit
Temp:	12.75" OD X 8.38" ID x 26" H
Filter Size:	200 sq. ft.
Efficiency:	MERV-15

FILTER UPGRADE: The PTFE filter is a heavy duty synthetic spun bond filter with a high efficiency PTFE membrane covering the media. The PTFE membrane not only increases efficiency but also the dust releasing capabilities for superior cleaning. The PTFE media is washable, extremely rugged, and resistant to abrasives.

Filter Media:	100% spun-bond polyester, flame retardant
Inner Cage:	Galvanized expanded metal
Outer Support:	2 outer band support
Max. Operating	275 Degrees Fahrenheit
Temp:	12.75" OD X 8.38" ID x 26" H
Filter Size:	70 sq. ft.
Efficiency:	MERV-16

FILTER UPGRADE: The Spun-bond polyester filter is HO treated and contains 100% spun-bond polyester. Polyester has a higher air-to-cloth ratio than cellulose blends, allowing for wider pleat spacing. The HO media is washable, extremely rugged, and resistant to abrasives.

Filter Media:	HO spun-bond polyester
Inner Cage:	Galvanized expanded metal
Outer Support:	2 outer support bands
Max. Operating	275 Degrees Fahrenheit
Temp:	12.75" OD X 8.38" ID x 26" H
Filter Size:	100 sq. ft.
Efficiency:	MERV-12

Advantages of Vertical Filters

By using filters that are placed vertically instead of horizontally, greater efficiency with a longer filter life is achieved. These vertical filters allow particles that are pulsed off to fall with the flow of air, decreasing the occurrence of re-entrainment. Vertical filters also utilize the entire filter area evenly; this prevents the top 1/3 of the filter becoming saturated as happens with horizontal filters.

BRAHM®
COLLECTOR SERIES

CLEAN AIR AMERICA, INC.

The Most Versatile, Compact, and Powerful Cartridge Collector on the Market

BC1/2

BC4

BC8

BC12

	BC1	BC2	BC4	BC8	BC12
No. of Filters	1	2	4	8	12
Total Filter Area (sq. ft)	226 sq. ft.	452 sq. ft.	904 sq. ft.	1,808 sq. ft.	2,712 sq. ft.
No. of Pulse Nozzles	1	2	4	4	6
No. of Valves/Size (in)	(1) 1"	(1) 1"	(2) 1.5"	(2) 1.5"	(2) 1.5"
No. of Inlets	1	1	1	1	1
Inlet Size (in)	18" sq.	18" sq.	30" sq.	30" sq.	30" sq.
Width (in)	52"	52"	42"	42"	42"
Depth (in)	27"	36"	78"	78"	105"
Height (in)	52"	52"	69"	95"	95"
Fire Suppression Height Add:	10"	10"	10"	10"	10"
Unit Weight Range (lbs)	750 - 1,000 lbs.	1,000 - 1,300 lbs.	1,600 - 2,200 lbs.	2,000 - 2,800 lbs.	2,400 - 3,200 lbs.
No. of Motors	1	1	1	1	1
Motor HP Range	1 - 5 HP	1 - 5 HP	5 - 7.5 HP	5 - 10 HP	5 - 15 HP
CFM Range	600 - 1,500 CFM	1,000 - 2,200 CFM	2,800 - 4,100 CFM	2,800 - 5,400 CFM	2,800 - 6,300 CFM
FLA	3P: 208V/240V/460V	3P: 208V/240V/460V	3P 208V/240V/460V	3P 208V/240V/460V	3P 208V/240V/460V

Multiple configurations to meet your complete air filtration needs

BC18

BC24

BC36

BC54

	BC18	BC24	BC36	BC54
No. of Filters	18	24	36	54
Total Filter Area (sq. ft)	4,068 sq. ft.	5,424 sq. ft.	8,136 sq. ft.	12,204 sq. ft.
No. of Pulse Nozzles	9	12	18	27
No. of Valves/Size (in)	(3) 1.5″	(4) 1.5″	(6) 1.5″	(9) 1.5″
No. of Inlets	1	1	2	3
Inlet Size (in)	36″ sq.	(2) 30″ sq.	(2) 36″ sq.	(3) 36″ sq.
Width (in)	58.25″	88″	116.5″	174.25″
Depth (in)	105″	105″	105″	105″
Height (in)	95″	105″	105″	105″
Fire Suppression Height Add:	10″	10″	10″	10″
Unit Weight Range (lbs)	3,300 - 4,100 lbs.	4,800 - 6,400 lbs.	6,600 - 8,200 lbs.	9,900 - 12,300 lbs.
No. of Motors	1	2	2	3
Motor HP Range	5 - 30 HP	(2 each) 10 - 30 HP	(2 each) 15 - 40 HP	(3 each) 15 - 40 HP
CFM Range	2,800 - 9,800 CFM	6,800 - 19,600 CFM	9,000 - 24,000 CFM	13,500 - 36,000 CFM
FLA	3P 208V/240V/460V	3P 208V/240V/460V	3P 208V/240V/460V	3P 208V/240V/460V

*Total unit weight depends on options, motors, and blowers selected. **Suitable blower will be configured for the application.

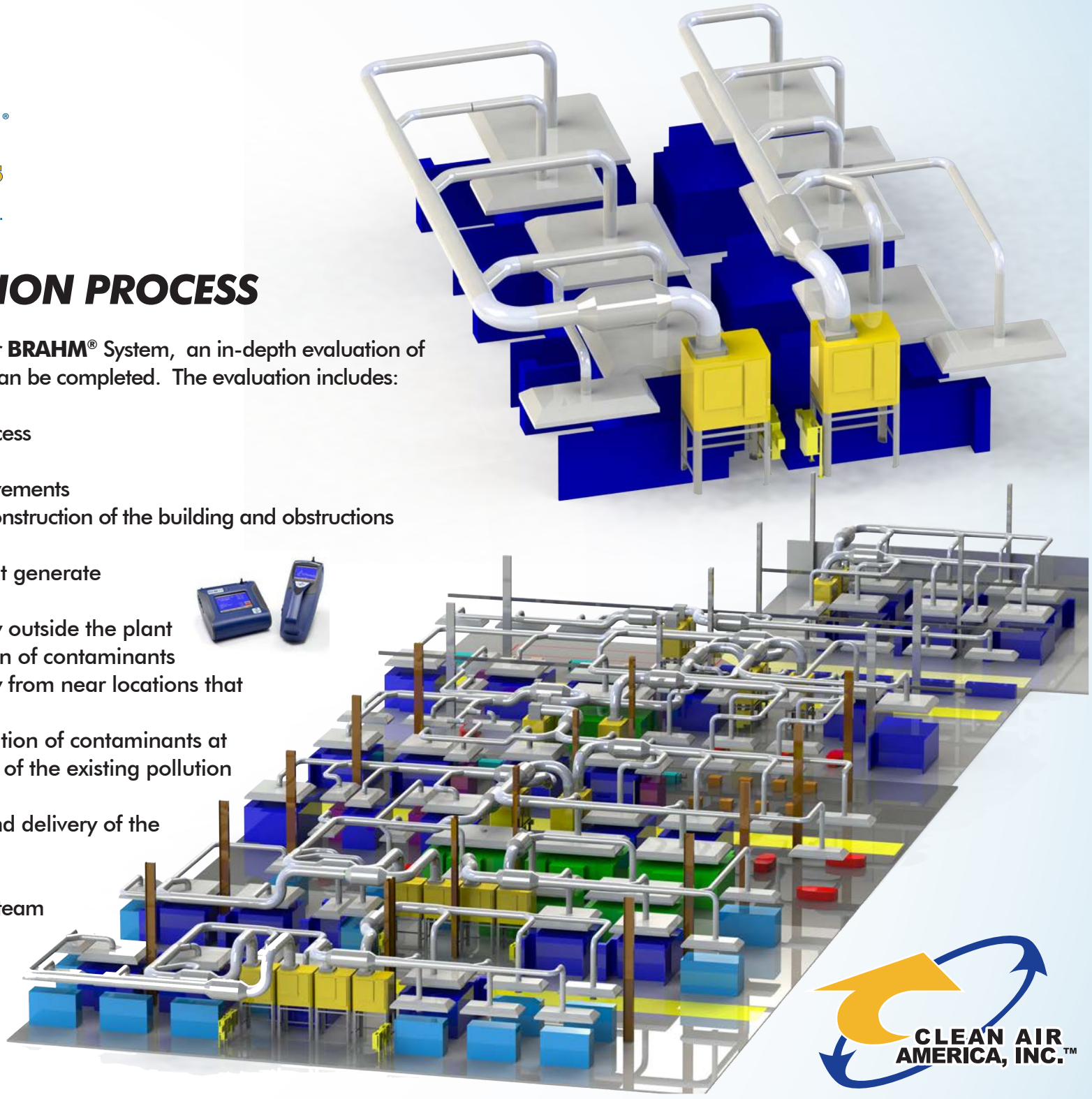
BRAHM® SERIES by CLEAN AIR AMERICA, INC.

FACILITY EVALUATION PROCESS

To correctly assist with your Clean Air **BRAHM®** System, an in-depth evaluation of your building layout and operation can be completed. The evaluation includes:

- Application/manufacturing process
- Operator procedures
- Existing ventilation and air movements
- Overall volume and general construction of the building and obstructions
- Air quality measurements:
  - -- Identify possible areas that generate contaminants
  - -- Readings of the air quality outside the plant
  - -- Readings of the generation of contaminants
  - -- Readings of the air quality from near locations that may be affected
  - -- Readings of the concentration of contaminants at the entrance and exhaust of the existing pollution control systems
  - -- Analysis, interpretation and delivery of the results

Upon evaluation of your facility, our team will provide you with an engineering design specification and system quotation. These will include system layout, system recommendation, and list of system components.



CLEAN AIR AMERICA, INC.™

The BRAHM® Collector Series is a part of Clean Air America's overall application solutions, which also include ambient, push-pull, and Clean Air Streamer™ products to completely eliminate residual smoke and contamination.

Clean Air DFX

This unit can be used either as a stand alone system for a smaller area or in a series of DFX units that are placed in a circular air flow pattern around the facility. The DFX system requires ZERO duct work and is versatile enough to handle a wide variety of applications. These units can be hung from the ceiling, mounted on the wall, or placed on legs, depending on the layout of the facility.

Clean Air Streamer

The Clean Air Streamer works in pairs to create a continuous airflow of clean air throughout the facility.

This system utilizes two important parts of the system for optimum filtration. The bottom of the system houses an inlet with metal baffles that draw the dirty air into the system for filtration. This air is run through the cartridge filters housed inside of the system. The clean, filtered air is then pushed out of the through drum louvers. This push creates a wall of clean air that pushes the dirty, smoky air towards another Streamer unit to be filtered.

Clean Air Push Pull System

Powered by a Clean Air BRAHM® Collector, the Clean Air Push Pull System utilizes a series of ducts with intake and exhaust louvers connected to a central collector to create the air flow pattern in the facility.

This system is customized for each facility based on the layout and current air flow pattern of the area. Extraction and recirculation duct is placed opposite each other to create a wall of clean air.

Clean Air America solutions are trusted by these prestigious partners:

Cardington Yutaka Technologies Inc.
Hutchens Industries
YOROZU
Gill Industries
AAM
ABB
HENDRICKSON The World Rides On Us
Magneti Marelli
Eberspächer
MAGNA
HONDA
BMW
TOYOTA
POLARIS The Way Out.
BENTELER
Calsonic Kansei
DANA
FLEX N GATE PLASTICS GROUP
F&P GEORGIA
QI QUALITY INDUSTRIES PRECISION METALWORKS
MERITOR
BRIGGS&STRATTON
Johnson Controls
KATCON
Metalsa Quality as a way of life
Club Car
bosal

CLEAN AIR AMERICA, INC.

7 Superior Drive
Rome, GA 30161
www.clean-air.com
866.665.1829

Clean Air America, Inc. is your one stop shop for all your air filtration needs.

From welding smoke to oily mist, Clean Air America offers a complete turnkey solution to fit your needs.

Manufactured and Shipped from Rome, GA, USA