TRION®
Indoor Air Quality

Air Boss® ATS

Air Purification System

Qualified to UL Category Code
YYXS-YYXS7
Hood and Duct Accessories

UL File #MH27669
New York City, Department of Buildings
MEA 288-01-E and 88-99-E

Engineered Solutions for Clean Air

The TRION ATS Series is ideal for the removal of grease and smoke from commercial cooking applications, as well as smoke, fumes, and oil/coolant mists from industrial processes. An optional Adsorber Module helps treat nuisance odors in the form of gaseous emissions. The modular design of the ATS Series allows for multiple filtration configurations, while an automated, integral water-wash system facilitates in-place cleaning of the electrostatic precipitator (ESP) filters.

Features

- UL Listed as a Kitchen Exhaust Hood and Duct Accessory
- MEA Approved for New York City Installations
- Solid State, Pulse Width Modulating Power Supplies
- Extra-depth Electrostatic Collecting Cells with Spiked Ionizing Blades
- Motorized Water Wash Manifolds with Spray Nozzles (ESP Section)
- Integral Mounting Rails
- Optional 2nd Stage Safety Filters (Electrostatic Precipitator or Bags) and 3rd Stage Odor Control (Activated Carbon or Potassium Permanganate)
- Optional UL 762, Grease-Rated Fan Package
- Optional Ansul® Fire Suppression Components to meet NFPA 96 Requirements

Benefits

- Green Emission Solution to Grease Exhaust
- UL Listing: Covers Indoor and Outdoors Installations; Allows for Discharge at Street Level and Into Public Spaces Outdoors
- Electrostatic Precipitator: Low, Constant Pressure Drop; Permanent, Cleanable Filters; Up to 95% DOP Collection Efficiency at 0.3 Microns
- Spiked Ionizers: Eliminates Ionizing Wire Replacement; Reduces Maintenance and Replacement Cost
- Self-Glazing, Ceramic Insulators: Out of Airstream; Impervious to Liquids; Provide Operational Longevity and Power Supply Life; Easy to Clean
- Hinged Side Access: Removable Doors Facilitates Filter Access

Applications, Modules, Particle Characteristics

Industrial

Oil Mist

Machine Shops
Cold Heading
Screw Machines
Foundry
Machining Centers
Heat Treating

Smoke

Welding
Presses/Forging
Curing
Rubber
Plasticisers
Heat Treating

Commercial

HVAC

Clean Rooms
Return Air
Outside/Makeup Air
Lounges
Smoking Rooms
Casinos

Kitchen Exhaust

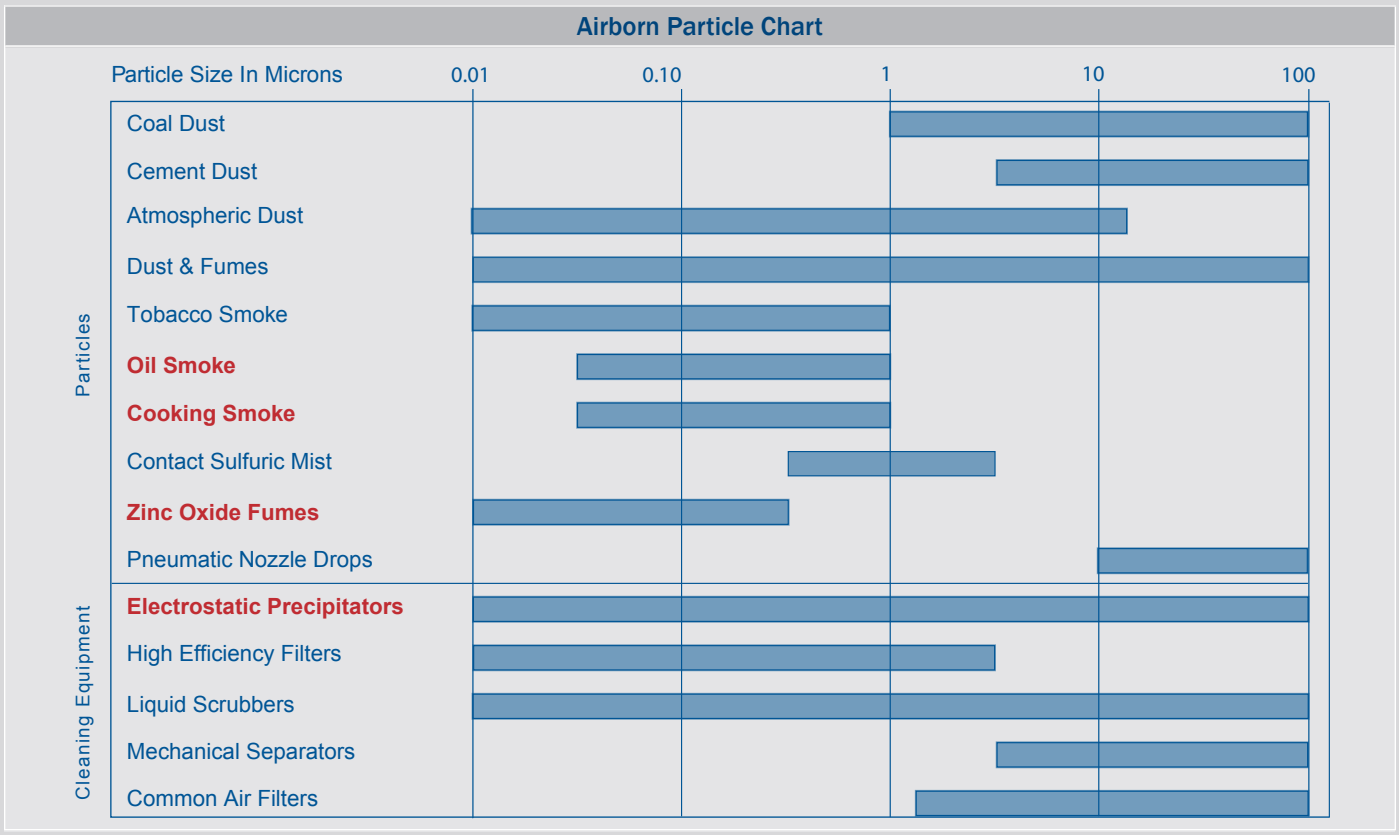
Grease
Smoke
Odors
Wood-fired

Modules and Functions

Module Name	Normal Function
ESP-Electrostatic Precipitator	High-Efficiency Primary Filtering Device
Media	Secondary or Safety Filter
Adsorber	Odor Control and Removal of Gases
Exhaust Fan	System Air Mover

ATS

Particle Characteristics

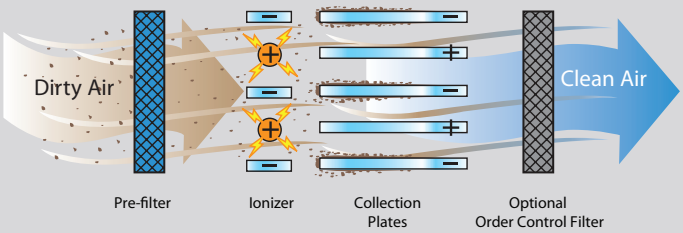


Operation & Design

Principals of Operation

During operation, the contaminated air to be cleaned passes across TRION's unique spiked ionizer blades which are supported between flat grounded electrodes. Revolutionary to the industry, the blades are made of stainless steel that will not rust or break, thus eliminating costly maintenance time and replacement costs.

The DC voltage supplied to the blades creates a high intensity field where the particulate matter in the air becomes electrically charged. The charged particles then pass into a collector plate section made up of a series of equally spaced parallel plates. Each alternate plate is charged with the same polarity as the particles, which repel, while the interleaving plates are grounded, which attract and collect.



Periodically, depending on the type and amount, the contaminant is washed into the cabinet drain basin by an automatic activated integral washing system that is located on both the upstream and downstream sides of the ionizing-collecting cell(s). "U" shaped slide rails are positioned on the air entrance and exit sides of the module housing. These rails will hold two-inch metal mesh filter panels or a 40% open perforated plate. The selection depends on the nature of the contaminant and the other modules used in the air treatment system.

A programmable logic controller (PLC) and dual voltage solid state Pulse Width Modulated (PWM) high voltage DC power supply are housed in a remote-mounted NEMA 12 enclosure. The PLC controls the system functions of wash, fire suppression, and fan on/off. A 7-day clock is standard. The PWM power supply, which energizes the ionizing-collecting cells, comes standard with LED indicator lights. Optional door-mounted meters, which aid in determining cell operating status, are also available. In applications requiring extremely high collection efficiency and low resistance to air flow, two or three electrostatic sections may be placed inline to create a double or triple pass unit.

Durable, Compact Cabinetry

When you invest in a TRION ATS, you want it not only to fit your unique needs, but your individual space as well. And you want it to last. TRION ATS housings are constructed using 16-gauge zinc-coated steel. Then all welds and the finished area of welds are treated with a corrosion- and rust-inhibiting coating to assure long life. Cabinet finish is completed with a durable industrial-grade semi-gloss baked-on enamel no less than 3 mil thick. All doors are gasketed to prevent air and water leakage. Finally, the housing is furnished completely assembled for easy shipment and installation.

The Electrostatic Air Cleaner Module

Electrostatic Air Cleaner Section enables extremely small particulate matter, "The Fines," to be removed from an air stream with relatively no resistance to air flow. This is due to the open area of the collecting elements. The low resistance is maintained from the start to the completion of the collection cycle. The unit operates in the higher efficiency collection range, upward of 95% DOP Method, on particles ranging in size from 10 microns down to 0.01 microns in size.

Design and Efficiency/Pressure Drop

Media Module (optional)

The flexibility of the media module provides an efficient means for high efficiency filtration, as a prefilter or after filter, depending on your requirement. This section is designed to house a variety of mechanical filters that may be required in your application. The housing allows for various filter combinations that are tailored to your specific needs, such as HEPAs, 95% bags, mini-pleated cartridges or other media. The heavy-gauge access housings are supplied with industrial-grade hardware.

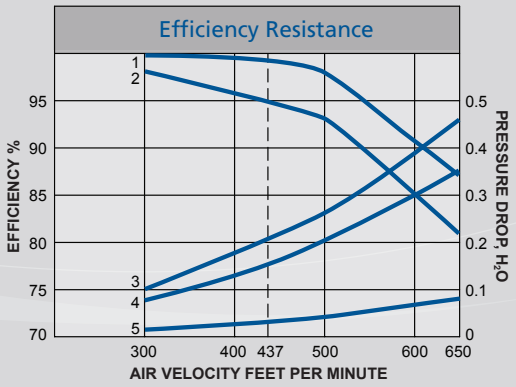
Adsorber Module (optional)

Unlike particulate filters, odors in the form of undesirable gases and vapors are most commonly removed from the air stream by the process of adsorption that is enhanced by multi-faceted porous surfaces of certain materials. Filter trays of activated carbon or optional potassium permanganate pellets effectively facilitate the adsorption of these odors and gaseous contaminants.

Upblast Blower (optional)

The NFPA 96 upblast fan is designed to mate with the air purification system and provide uniform air distribution. It is a centrifugal upblast exhaust fan, with drain, in compliance with UL 762 for kitchen exhaust applications containing grease-laden air. The blower wheel is steel, backward inclined, all welded construction.

Air Velocity Feet Per Minute



Legend - Efficiency/Resistance Chart

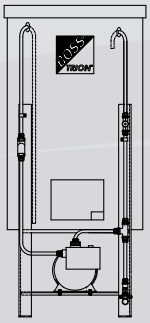
Efficiency Curves

1. ASHRAE Standard 52.1-1992 Dust Spot Efficiency per AFTL Test Report No. 13466
2. 0.3 Micron DOP efficiency per AFTL Test Report No. 13466

Pressure Drop Curves

3. Cell with 40% open Perforated Plate upstream and downstream
4. Cell with 2” Aluminum Mesh Filter upstream and downstream
5. Cell only

Typical System Layout



Detergent Tank

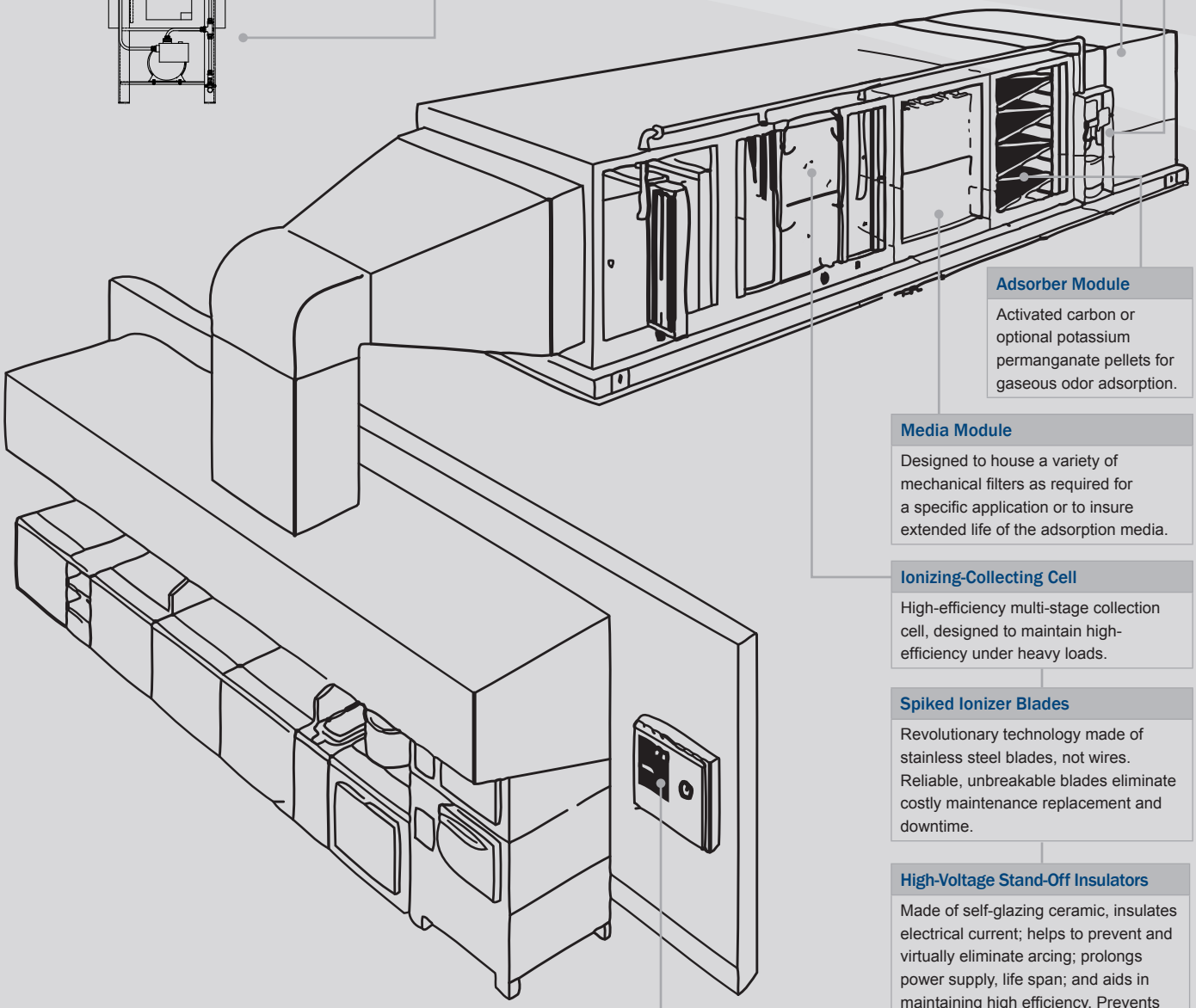
TRION approved concentrated detergents used to clean commercial or industrial applications. Includes: tank (16, 30, 55 gallon sizes), feeder pump, metering value, strainers and water control valves.

Fan Package-Standard

Backward-inclined, energy-efficient centrifugal fans of heavy duty AMCA arrangement 9 inline or arrangement 10 upblast design, class II construction, belt-driven with belt and drive guards.

Fire Suppression Option

Weather-tight enclosure includes Ansul 2W nozzles for the electronic air cleaner section



Adsorber Module

Activated carbon or optional potassium permanganate pellets for gaseous odor adsorption.

Media Module

Designed to house a variety of mechanical filters as required for a specific application or to insure extended life of the adsorption media.

Ionizing-Collecting Cell

High-efficiency multi-stage collection cell, designed to maintain high-efficiency under heavy loads.

Spiked Ionizer Blades

Revolutionary technology made of stainless steel blades, not wires. Reliable, unbreakable blades eliminate costly maintenance replacement and downtime.

High-Voltage Stand-Off Insulators

Made of self-glazing ceramic, insulates electrical current; helps to prevent and virtually eliminate arcing; prolongs power supply, life span; and aids in maintaining high efficiency. Prevents tracking, retards contaminant build-up and provides easy cleaning.

Control Panel

Remote wall-mounted NEMA 12 cabinet housing a PLC (programmable logic controller) for the control of fan, wash system, power supples, optional dampers, fire suppression, etc. Also includes the PWM (pulse width modulating) high voltage power supply. 120 Volt/1Phase/60hz AC

Unit Selection & Critical Specifications

Static Pressure Drops

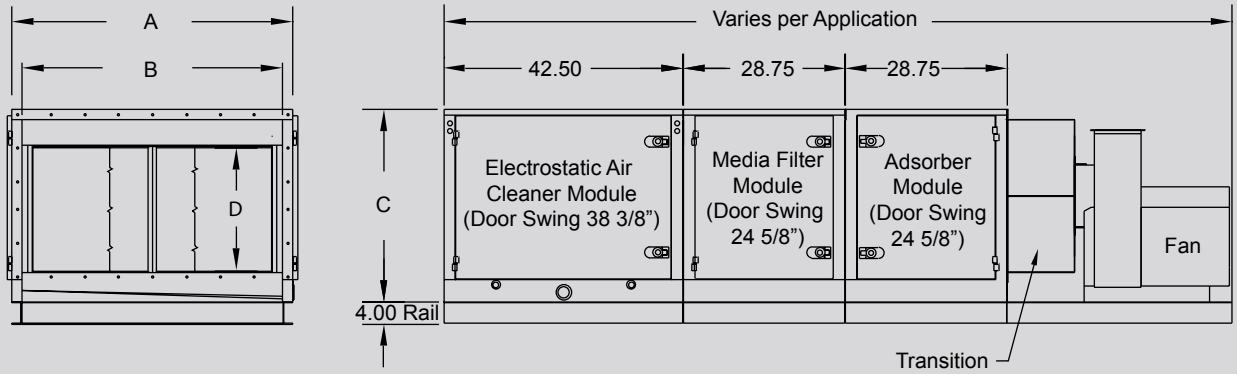
TRION Equipment Losses Inches H_2O		
ESP Section	0.14”	
40% Open Perforated Prefilter or After Filter	0.15”	
Metal Mesh Prefilter or After Filter	0.10”	
2” Impinger	1.25”	
Media Section	0.11”	
	Initial	**Final**
4” Pleated Prefilter, 40% Efficient	0.17”	1.00"
10 Pocket Bag, 95% Efficient	0.40”	1.20"
Hepa, 99.97% Efficient	1.00”	1.50"
Adsorber Section	0.28”	
2” Trays	0.28”	
4” Modules	0.36”	
Fan Transition	0.11”	

Unit Selection Guidelines

Efficiency	DOP CFM Capacity		Cell Face
	95%	90%	Area Sq. Ft.
ATS-2	1,285	1,593	2.94
ATS-4	2,570	3,187	5.88
ATS-6	4,186	5,192	9.58
ATS-8	5,138	6,374	11.76
ATS-10	6,756	8,379	15.46
ATS-12	8,373	10,385	19.16
Face Velocity	437 fpm	542 fpm	-

The ESP section must have both an internal prefilter and after filter-select and add for each. External losses for ductwork, exhaust hoods, manufacturing equipment with associated entry losses, kitchen hoods, etc., must be added to the TRION internal equipment losses to calculate total fan static pressure required.

ATS Dimensional Data



Model Selection Guide							
Model	**Module width Dim. "A"**	**Inside Flange ID Dim. "B"**	**Unit Height Dim "C"**	**Inside Flange ID Dim. "D"**	**Avg. Water Req. GPM/Wash @40 PSI**	**Cell Face Area (FT2)**	**Detergent (Gal)**
ATS-2	27.69	24.25	34.25	27.19	3.6	2.94	.18
ATS-4	50.00	46.38	34.25	27.19	8.4	5.88	.36
ATS-6	72.38	68.75	34.25	27.19	13.2	9.58	.54
ATS-8	50.00	46.38	58.63	51.56	16.8	11.76	.72
ATS-10	61.18	57.56	58.63	51.56	21.6	15.46	.90
ATS-12	72.38	68.75	58.63	51.56	26.4	19.16	1.08

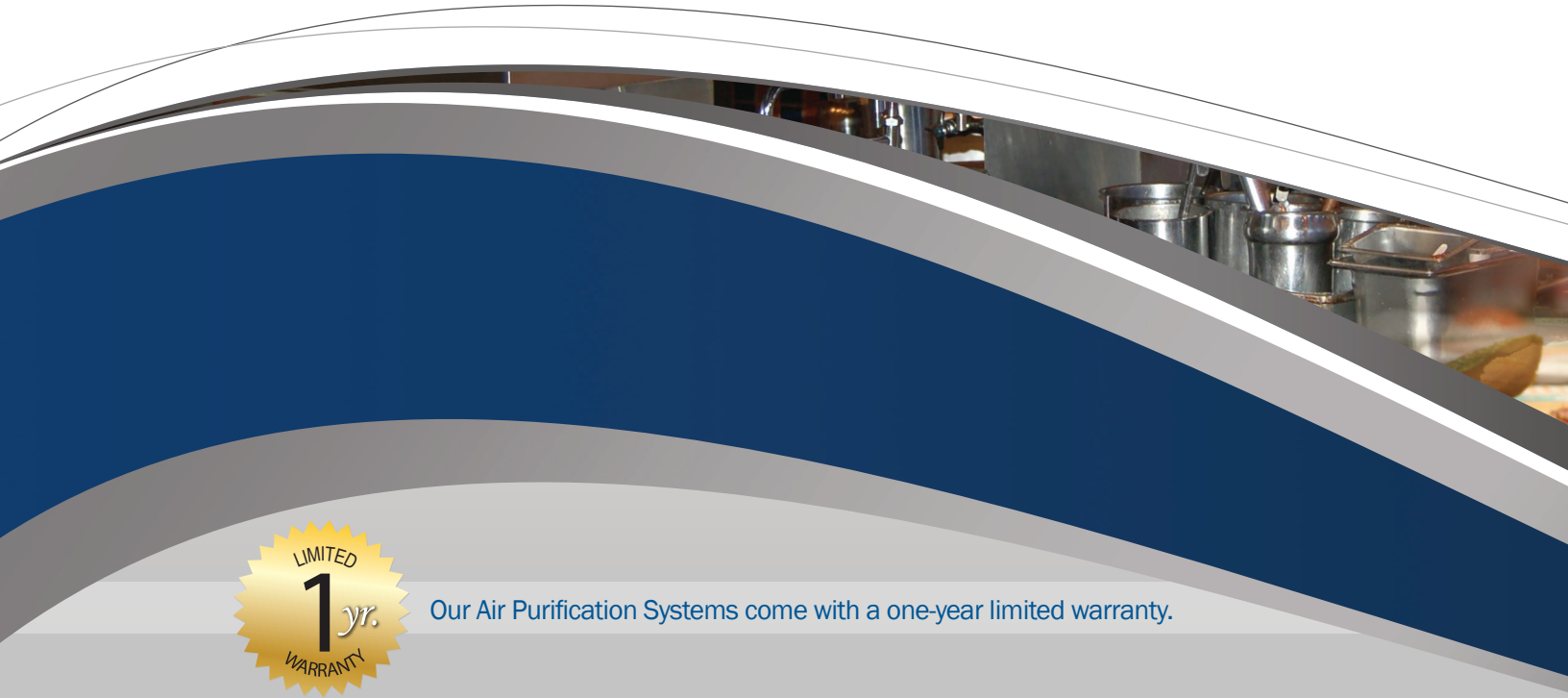
(1) Dimensions shown in inches.

(2) System depth as shown to the sum of all module, transition & fan depths and 1/8” firestop allowance between each module.

(3) System weight equal to the sum of all module weights and mounting rail.

(4) Electrostatic module supplied with (2) 1” wash water supply couplings and (1) 2” drain coupling.

(5) Module access doors located on one side. (Lift-off hinges) specify access required.



LIMITED 1 yr. WARRANTY

Our Air Purification Systems come with a one-year limited warranty.

Learn more about other TRION industrial products by contacting your local TRION representative or by visiting us on the web at www.trioniaq.com.

Mini M.E. Mist Collector

TRION®
Indoor Air Quality

Indoor Air Quality Since 1948.

Industry Membership:

ASHRAE

Proudly Designed, Engineered, and Manufactured in the USA.*

**Manufactured with domestic and foreign components.*

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