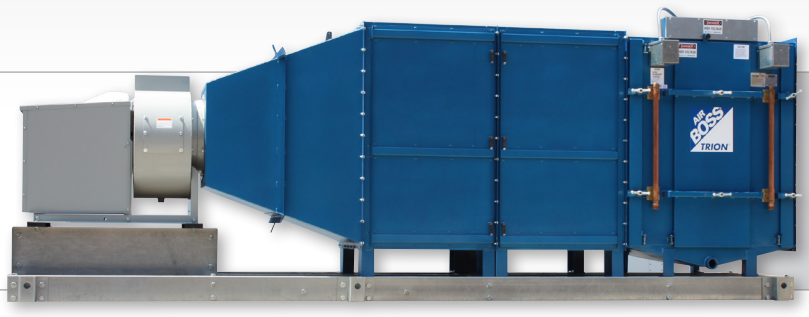
TRION
Air Purification Systems



Air Boss® Model 75

Electrostatic Precipitators

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

Air Boss® 75

When you need one system for cleaning numerous applications, such as kitchen grease and smoke, oil mist, and contaminants from other industrial processes, Trion® has a kitchen exhaust, commercial, or large industrial solution just for you in the Air Boss® 75.

Atmospheric contaminants may be either liquids or solids, in the form of oil, water, grease, smoke, fumes, or dusts, including gaseous and vaporous odors. The Air Boss® 75 readily adapts to the various air collection methods utilized to recover contaminants for collection. Air inlet and outlet flanges on the modules include predrilled holes to connect adjoining ductwork. Module support rails are optional for mulitple mounting methods.

Units are factory assembled using four modules that you specify to meet your application requirements.

- ESP (Electrostatic Precipitator): High-Efficiency Primary Or Secondary Filter Device
- Media: Primary, Secondary, or Backup Filter
- Adsorber: Odor Control and Removal
- Exhaust Fan: System Air Mover

Features & Benefits

- Effectively removes airborne solids, liquids, and odors.
- Factory assembled, built-up construction for simplified installation and service.
- Durable, efficient cell design for long term performance and reliability.
- Spiked Ionizers prevent common wire breakage and replacement.
- Integral Programmable Logic Controller (PLC) automates cleaning process to reduce maintenance costs and ensure efficient air cleaning at all times.
- Optional fire suppression system.
- ETL approved to UL standard 867.
- Designed to NFPA 96 standards for kitchen exhaust.
- Up to 99% efficient, per DOP or ASHRAE test methods.

Applications

- For Oil Mist: Machine shops, cold heading, screw machines, foundry, machining centers, heat treating, and tenter frames.
- For Smoke: Welding, presses/forging, curing, rubber, plasticisers, and heat treating.
- For HVAC: Return air, outside/makeup air, lounges/bars, smoking rooms, casinos, and indoor gun ranges.
- For Kitchen Exhaust: Grease, smoke, odors, and wood-fired grills.

About the Technology

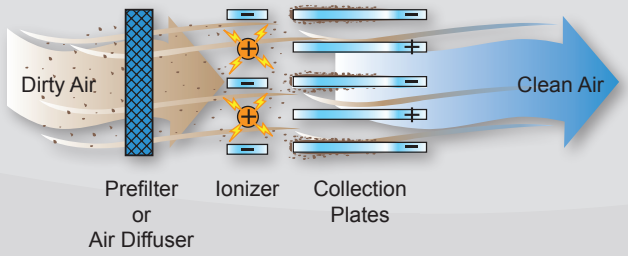
During operation, contaminated air passes across Trion's unique spiked ionizer blades which are supported between flat grounded electrodes. Revolutionary to the industry, the blades are made of stainless steel that will not rust or break, thus eliminating the costly maintenance time and replacement cost of similar units using tungsten wire ionizers.

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).

A programmable logic controller (PLC) and dual solid-state Pulse Width Modulated (PWM) high voltage DC power supply are housed in a remote-mounted NEMA 1 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 airflow, two or three electrostatic sections may be placed inline to create a double or triple pass unit.



Particle Size Ranges vs. Cleaning Equipment

Note: Darkened horizontal lines indicate range of particle size.

General Information

Durable, Compact Cabinetry

Model 75 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.

Prefilter / Impinger

The prefilter/impinger track is a standard integral part of the Model 75 ESP cabinet. A 2" rail is positioned upstream of the ESP collector cell to accommodate a standard 40% free area perforated panel for even air distribution, a metal mesh prefilter for light oil mist, or an impinger for more heavy, fluid or semifluid particulate matter. The particulate matter may range in viscosities from that of water to relatively heavy greases. In heavy loading applications, the liquid particles strike the impinger, coalesce into droplets and then flow to the drain pan below. If the particles are of a high viscosity nature that do not readily flow into the drain pan, they are periodically flushed down the drain with an optional bolt on collar containing an integral wash system located upstream of the impinger. A similar track, located downstream of the unit, is designed to house a perforated panel and functions as an air distribution device as well as a safety screen like its upstream counterpart.

The Electrostatic Precipitator Section

The electrostatic precipitator section enables extremely small particulate matter to be removed from an air stream with relatively no resistance to airflow 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.

Standard Blower Package

The TEFC energy efficient blower is designed for horizontal air flow and mates with the air purification system to provide a uniform distribution of air. The blower wheel is steel, backward inclined, welded construction.

Optional Upblast Blower

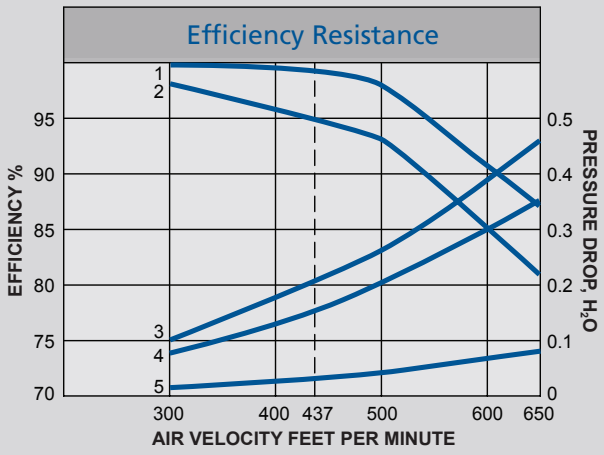
The NFPA 96 Upblast fan is designed to mate with the air purification system and provide uniform air distribution. It is a centrifugal Upblast exhaust fan, with drain, in compliance with UL 762 for kitchen exhaust applications containing grease-laden air. The blower wheel is steel, backward inclined,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

Side Access Filter Housing

The flexibility of the Media section 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-guage dual-access housings are supplied with industrial-grade hardware.

Side Access Odor Control Section

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 multifaceted porous surfaces of certain materials. Filter trays of activated carbon or optional potassium permanganate pellets effectively facilitate the adsorption of these odors and gaseous contaminates.



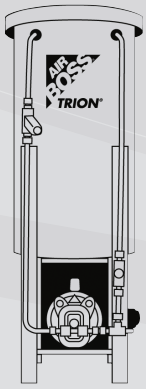
Efficiency Curves

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

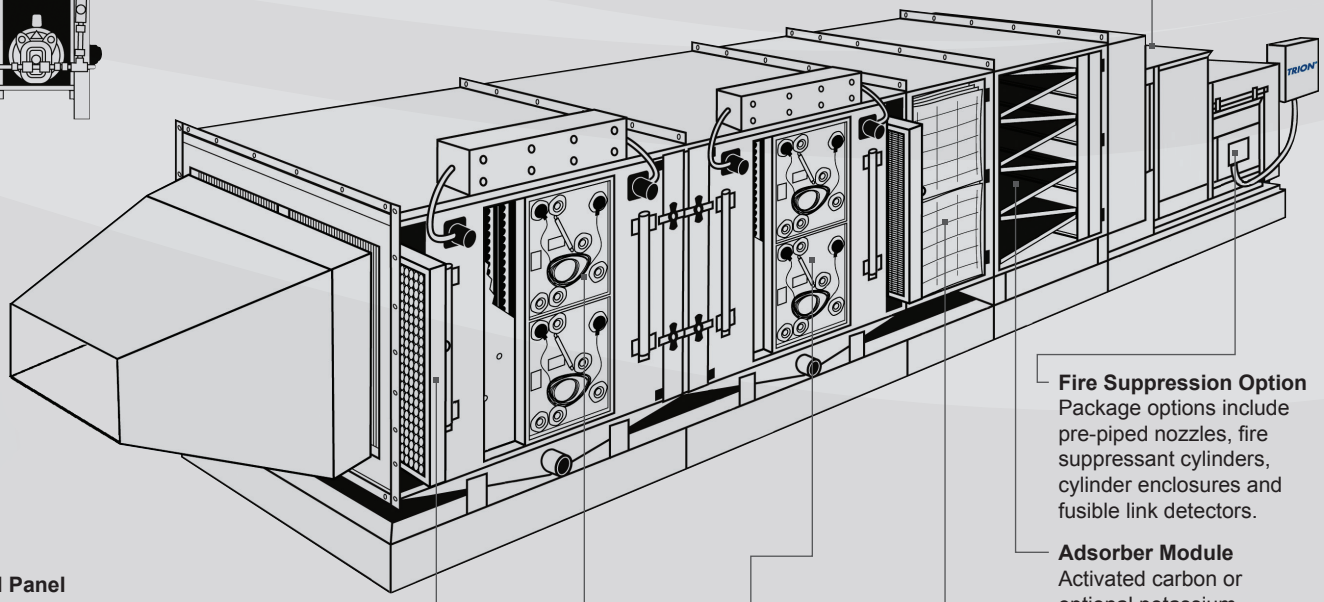
3. *Cell with 40% open perforated plate upstream and downstream.*
4. *Cell with 2" aluminum mesh filter upstream and downstream.*
5. *Cell only.*

Unit Description



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, belt-driven with belt and drive guards or weather hood.



Fire Suppression Option
Package options include pre-piped nozzles, fire suppressant cylinders, cylinder enclosures and fusible link detectors.

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.

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

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.

Prefilter
Metal mesh or perforated plate prefilter for safety and capture of oversize objects and agglomerated mists. Impinger may be used to knock down heavy mists and kitchen grease.

Dimensional Information

Model 75-XXX-XX (Wash Optional)

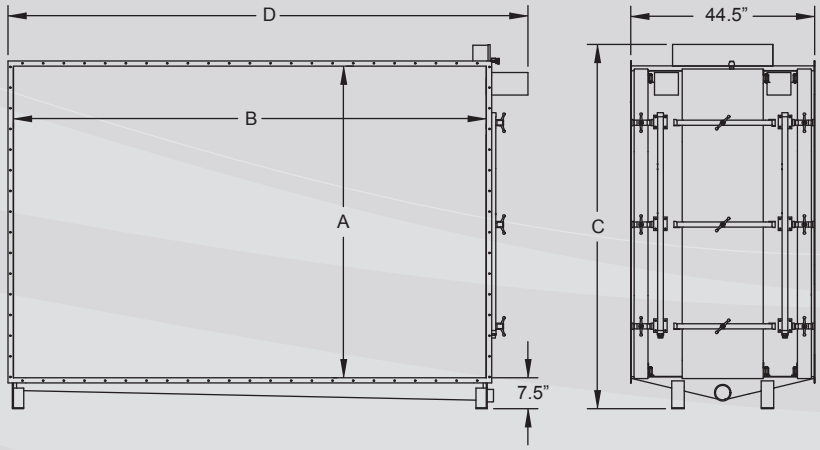
Model Number	Collar Dimensions Inside		Overall Dimensions		Weight (4)	Water Req'd @50 psi	Water Req'd Per Cycle	Detergent Per Cycle
	Height A	Width B	Height C	Width D	Lbs.	GPM	Gallons	Gallons
75-102-XX	26.12	25.69	38.87	37.09	370	5.3	1836	.3
75-103-XX	26.12	36.88	38.87	48.28	450	8.0	28.0	.4
75-104-XX	26.12	47.82	38.87	59.22	540	10.6	37.1	.5
75-105-XX	26.12	59.01	38.87	70.41	620	13.3	46.6	.7
75-106-XX	26.12	70.19	38.87	81.59	705	16.0	56.0	.8
75-107-XX	26.12	81.13	38.87	92.53	800	18.6	65.1	.9
75-108-XX	26.12	92.35	38.87	103.75	880	21.3	74.6	1.1
75-109-XX	26.12	103.54	38.87	114.94	960	23.9	83.7	1.2
75-110-XX	26.12	114.38	38.87	125.78	1050	26.6	93.1	1.3
75-203-XX	50.74	36.88	63.50	48.28	740	16.0	56.0	.8
75-204-XX	50.74	47.82	63.50	59.22	905	21.3	74.6	1.1
75-205-XX	50.74	59.01	63.50	70.41	1050	26.6	93.1	1.3
75-206-XX	50.74	70.19	63.50	81.59	1190	31.9	111.7	1.6
75-207-XX	50.74	81.13	63.50	92.53	1360	37.2	130.2	1.9
75-208-XX	50.74	92.35	63.50	103.75	1500	42.6	149.1	2.1
75-209-XX	50.74	103.54	63.50	114.94	1640	47.9	167.7	2.4
75-210-XX	50.74	114.38	63.50	125.78	1805	53.2	186.2	2.7
75-303-XX	75.37	36.88	88.12	48.28	1050	23.9	83.7	1.2
75-304-XX	75.37	47.82	88.12	59.22	1275	31.9	111.7	1.6
75-305-XX	75.37	59.01	88.12	70.41	1480	39.9	139.7	2.0
75-306-XX	75.37	70.19	88.12	81.59	1680	47.9	167.7	2.4
75-307-XX	75.37	81.13	88.12	92.53	1920	55.9	195.7	2.8
75-308-XX	75.37	92.35	88.12	103.75	2120	63.8	223.3	3.2
75-309-XX	75.37	103.54	88.12	114.94	2325	71.8	251.3	3.6
75-310-XX	75.37	114.38	88.12	125.78	2552	79.8	279.3	4.0

Model Number	ASHRAE 52.1 CFM Capacities Efficiencies (1)		.3 Micron DOP CFM Capacities Efficiencies (2)		Cell Face Area (3)	PWM Power Supplies
	95%	90%	95%	90%	Sq. Ft.	Quantity
75-102-XX	1588	1790	1285	1593	2.94	1
75-103-XX	2587	2917	2093	2596	4.79	1
75-104-XX	3175	3581	2570	3187	5.88	1
75-105-XX	4174	4708	3378	4190	7.73	1
75-106-XX	5173	5834	4186	5192	9.58	2
75-107-XX	5762	6498	4663	5783	10.67	2
75-108-XX	6761	7625	5471	6786	12.52	2
75-109-XX	7760	8751	6280	7789	14.37	2
75-110-XX	8348	9415	6756	8379	15.46	2
75-203-XX	5173	5834	4187	5192	9.58	2
75-204-XX	6350	7162	5139	6374	11.76	2
75-205-XX	8348	9415	6756	8379	15.46	2
75-206-XX	10346	11668	8373	10385	19.16	4
75-207-XX	11524	12996	9326	11566	21.34	4
75-208-XX	13522	15249	10942	13572	25.04	4
75-209-XX	15520	17503	12559	15577	28.74	4
75-210-XX	16697	18830	13512	16759	30.92	4
75-303-XX	7760	8751	6280	7789	14.37	3
75-304-XX	9526	10743	7709	9561	17.64	3
75-305-XX	12523	14123	10134	12569	23.19	3
75-306-XX	15520	17503	12559	15577	28.74	6
75-307-XX	17285	19494	13988	17349	32.01	6
75-308-XX	20282	22874	16414	20358	37.56	6
75-309-XX	23279	26254	18839	23366	43.11	6
75-310-XX	25045	28245	20268	25138	46.38	6

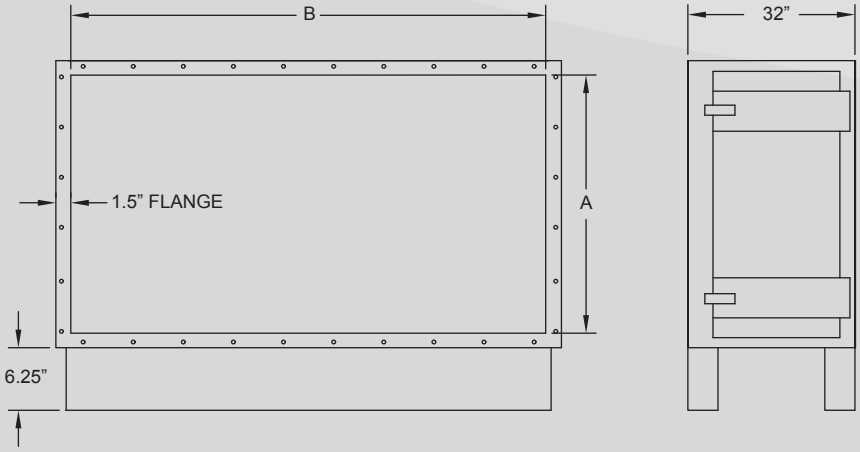
1) ASHRAE Standard 52.1-1992 Dust Spot Test Method.
2) DOP efficiency based on use of dioctylphthalate aerosol mist.
3) Total gross face area of ionizing-collecting cells in accordance with ASHRAE Standard 5.1. Mounting flange is 1.25" wide.
4) Total weight of the unit with control panel(s) and 16 gallon detergent tank/pump (liquid detergent not included).

Dimensional Information

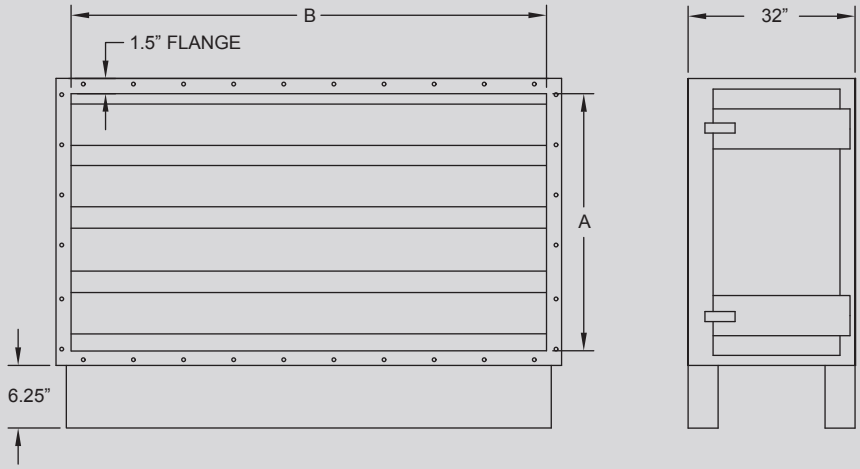
Model 75 Electrostatic Precipitator



Media Housing



Odor Control Housing



Static Pressure Drops

Equipment Losses	In. H_2O
ESP Section	**.14"**
40 % Open Perforated Prefilter or After Filter	.15"
Metal Mesh Prefilter or After Filter	.10"
2" Impinger	1.25"
Media Section	**.11"**
4" Pleated Prefilter, 40% Efficient	.17" (Initial) 1.00" (Final)
10 Pocket Bag, 95% Efficient	.40" (Initial) 1.20" (Final)
HEPA, 99.97% Efficient	1.00" (Initial) 1.50" (Final)
Adsorber Section	**.28"**
2" Trays	.28"
4" Modules	.36"
Fan Transition	**.11"**

Note: 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.

Our Air Boss® Model 75 comes with a one-year limited warranty.

T-Series Electronic Air Cleaner

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
Air Purification Systems

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