

FN1AAF OptiClean™ Negative Air Machine and Air Scrubber



Product Data



Fig. 1 – OptiClean™ Negative Air Machine and Air Scrubber

A200220CA

The OptiClean™ negative air machine is a portable solution primarily designed to help convert normal hospital rooms into Airborne Infectious Isolation (AII) rooms. Designed to ASHRAE's Standard 170 for Ventilation of Health Care Facilities, the OptiClean™ uses highly efficient filters and a heavy duty, yet quiet, motor to remove contaminated air from the room. The resulting negative air pressure, or "vacuum effect," helps limit the spread of air-based contaminants into surrounding areas.

If negative pressure is not required, such as in an open-air, temporary hospital, a business location or home, the machine can be used as an air "scrubber," pulling air in, removing many contaminants, and discharging cleaner air back into the room.

The unit can be operated either vertically as shown, or horizontally.

STANDARD FEATURES

- 99.97% efficient long-life HEPA filter removes particles as small as 0.3 microns
- Standard MERV 7 or higher pre-filter
- Minimum 200 CFM, Maximum 1500 CFM
- Meets or exceeds ASHRAE Standard 170: Ventilation of Health Care Facilities
- Vertical design for smaller footprint compared to many competitors, and can be mounted and operated horizontally when necessary
- Portable and adaptable to nearly any location
- Heavy duty locking casters for easy and smooth transport
- HEPA filter rack and sealing design meet air leakage requirement
- Red lighted indicator to alert user when filters are overloaded (generally means pre-filter requires replacement)
- Green ON/OFF switch illuminates to verify when running
- 3-second motor start delay
- 3-speed selector switch on 006 and 015 models for various air flow ranges
- 10-foot long power cord with strain relief
- 115V
- Galvanized steel, pre-painted cabinet is fully insulated
- Exhaust transition plate to standard 10-inch round (005/006 sizes) or 12-inch oval (015 size) duct included
- UL® Listed
- One year limited warranty



Fig. 2 – Room Setup Example for Negative Air

A200221

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Table 1 – Model Number Nomenclature

	1	2	3	4	5	6	7,8,9	10	11, 12
	F	N	1	A	A	F	015	0	00
Product F = Fan Unit									
Type N = Negative Air									
Position 1 = Upflow									
Series A = Initial Series									
Electrical A = 115V, 60 Hz, 1-phase									
Cabinet F = Single-piece Cabinet									
							Heater 00 = no heater		
							Coil Type 0 = no coil		
							Capacity 005 = 500 cfm 006 = 600 cfm 015 = 1500 cfm		

Table 2 – FN1AAF Basic Dimensional Data

Model Size	Dimensions- inches (mm)			Unit Operating Weight lbs (kg)
	Height*	Width	Depth	
005, 006	49-5/8 (1260.5)	17-5/8 (447.7)	22-1/16 (560.4)	125 (56.7)
015	53-7/16 (1357.3)	21-1/8 (536.6)	22-1/16 (560.4)	150 (68.0)

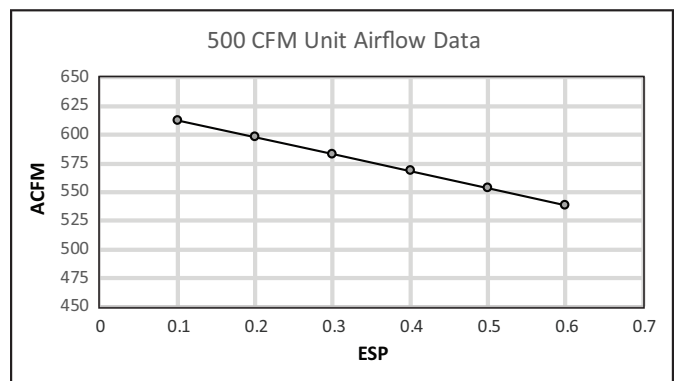
*. Height without casters. Add 3-5/8" (92.1 mm) when casters installed

Table 3 – Specifications

	005, 006 Size	015 Size
Air Discharge	Vertical	
Air Intake Dimension (thru bottom) - in. (mm)	15-1/2 x 19-13/16 (387 x 503)	19 x 19-13/16 (483 x 503)
Blower Type	Direct Drive	
CFM (Nominal)	500	500 / 1000 / 1500
Motor Type	ECM	
Motor HP	3/4	1.0
Rated RPM	1500	
FILTERS (in.)		
Factory Installed - in.	Pre-Filter - 16 x 20 x 2 HEPA - 16 x 20 x 12	Pre-Filter - 20 x 20 x 2 HEPA - 20 x 20 x 12
ELECTRICAL DATA		
Voltage	115	
Hertz	60	
Amps	5.0	12.0

Fig. 3 – Static Pressure - 005 Size

External Static Pressure (ESP)	0.1	0.2	0.3	0.4	0.5	0.6
Actual Flow (CFM)	613	598	583	568	554	539

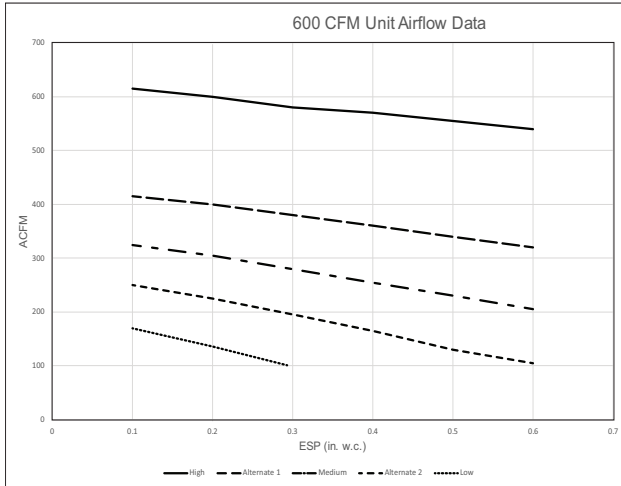


Airflow based upon clean pre-filter at 115V with factory-approved HEPA filter. Measured with 10 feet of flex duct installed. A200225

Fig. 4 – Static Pressure - 006 Size

Fan Speed	Motor Tap Number	Unit Airflow Data (CFM)						
		External Static Pressure (inches of water column)						
		0.1*	0.1	0.2	0.3	0.4	0.5	0.6
High	5	696	615	600	580	570	555	540
Alternate 1	4	510	415	400	380	360	340	320
Medium	3	407	325	305	280	255	230	205
Alternate 2	2	329	250	225	195	165	130	105
Low	1	221	175	140	100			

* CFM with accessory Air Diffuser (no adapter plate)

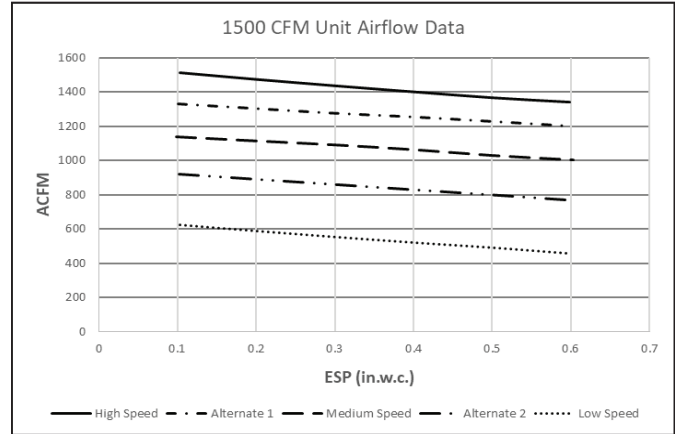


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Fig. 5 – Static Pressure - 015 Size

Fan Speed	Motor Tap Number	Unit Airflow Data (CFM)						
		External Static Pressure (inches of water column)						
		0.1*	0.1	0.2	0.3	0.4	0.5	0.6
High	5	1500	1510	1470	1435	1400	1365	1340
Alternate 1	4	1295	1325	1300	1275	1255	1225	1200
Medium	3	1100	1140	1115	1090	1065	1030	1005
Alternate 2	2	870	915	885	860	830	800	770
Low	1	610	625	585	555	520	490	455

* CFM with accessory Air Diffuser (no adapter plate)



Airflow based upon clean pre-filter at 115V with factory-approved HEPA filter. Measured with 10 feet of flex duct installed

A200253

High-Altitude Adjustment

Depending on your location, you may see up to 10% increase of measured airflow at higher altitudes. To compensate, you can change motor taps for alternate airflows. See instructions in the Operation and Maintenance Manual.

Table 4 – Sound vs Airflow Data

005 Model					
Motor Tap*	Switch Position	Nominal Airflow†	as NAM (dB)	as Scrubber (dB)	with Accessory Diffuser (dB)
1		375	48	54	51
2		425	51	57	54
3	Factory Setting	500	53	59	57
4		575	55	61	59
5		600	55	62	60
006 Model					
Motor Tap	Switch Position	Airflow	as NAM (dB)	as Scrubber (dB)	with Accessory Diffuser (dB)
1	Low	200	39	41	39
2		300	43	46	43
3	Medium	400	45	49	46
4		500	49	52	50
5	High	600	51	58	56
015 Model					
Motor Tap	Switch Position	Airflow	as NAM (dB)	as Scrubber (dB)	with Accessory Diffuser (dB)
1	Low	500	51	53	49
2		800	56	59	55
3	Medium	1000	60	63	59
4		1200	61	65	62
5	High	1500	61	67	64

* The factory-set low and medium airflow can be moved to Speed Tap 2 or Speed Tap 4 airflow respectively, by removing the upper panel and moving the motor pin selection. Refer to Operation and Maintenance manual for procedure.

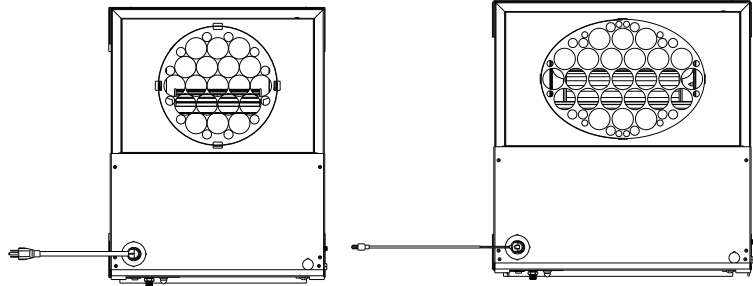
† Airflow measured at 0.3 ESP (external static pressure). For other ESP values, see Static Pressure tables above.

Table 5 – Octave Band Sound Data

	Negative Air Machine Mode						Air Scrubber Mode with Adaptor Plate						Air Scrubber Mode — with Air Diffuser				
	Hz	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	
005 SIZE	OA (dB(A))	48	51	53	55	55	54	57	59	61	62	51	54	57	59	60	
	Octave (dB(A))	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	
	125	41.3	44.6	46.9	48.6	48.3	42.0	44.7	46.9	49.0	49.8	43.4	46.3	48.6	50.5	51.4	
	250	42.3	45.2	47.0	48.5	49.1	44.8	47.1	49.2	50.9	51.5	44.3	47.1	49.4	51.2	51.8	
	500	41.8	44.3	46.3	47.6	48.6	47.1	49.7	51.8	53.4	54.0	43.7	46.2	48.6	50.5	51.2	
	1000	40.3	42.9	45.0	46.4	46.7	48.9	51.4	53.4	55.2	55.9	43.3	46.3	49.1	51.2	52.1	
	2000	38.3	41.0	43.3	44.5	45.0	48.2	50.9	53.2	55.0	55.6	43.2	46.3	49.2	51.3	52.1	
	4000	32.6	35.8	38.3	39.8	40.4	44.4	47.7	50.3	52.3	53.0	40.7	44.3	47.6	50.0	50.9	
	8000	23.4	26.2	28.7	30.8	31.5	34.6	38.4	41.6	44.1	45.1	32.1	35.8	39.1	41.7	42.6	
006 SIZE	Hz	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	
	OA (dB(A))	39	43	46	49	51	41	46	49	52	58	39	43	46	50	56	
	Octave (dB(A))	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	
	125	31.8	35.2	38.2	42.2	45.0	31.3	34.6	37.4	40.9	46.5	31.1	35.0	37.9	41.7	48.2	
	250	32.7	36.6	38.9	41.8	46.1	34.1	38.0	40.3	43.2	49.3	34.0	37.7	40.1	43.2	49.7	
	500	32.7	36.5	39.0	41.7	43.4	35.2	39.8	42.2	45.2	49.9	32.1	36.0	38.6	41.9	47.8	
	1000	29.8	34.9	37.7	40.7	42.5	35.3	40.8	43.9	47.5	52.3	28.9	34.2	37.4	41.4	48.0	
	2000	26.8	32.8	35.9	39.4	41.3	31.8	38.3	41.7	45.7	50.9	27.2	33.4	37.0	41.4	48.3	
	4000	22.5	28.1	31.9	35.8	37.9	25.1	31.7	36.1	40.8	47.1	23.7	29.8	34.1	39.1	47.2	
	8000	20.4	21.6	23.8	27.2	29.2	20.6	23.3	26.9	31.7	38.8	20.5	22.5	25.5	30.1	38.5	
015 SIZE	Hz	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	
	OA (dB(A))	51	56	60	61	61	53	59	63	65	67	49	55	59	62	64	
	Octave (dB(A))	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	Speed 1	Speed 2	Speed 3	Speed 4	Speed 5	
	125	44.5	49.9	54.1	55.2	55.4	42.7	48.6	52.9	55.2	55.9	43.1	49.1	52.9	55.0	56.1	
	250	44.2	49.2	52.9	54.4	54.5	45.3	50.6	55.0	57.1	57.7	43.7	48.8	52.6	54.7	56.6	
	500	42.5	47.2	51.0	52.3	52.4	46.2	50.9	55.6	57.6	59.5	40.6	46.1	50.3	53.0	55.1	
	1000	42.8	48.1	52.0	53.5	53.6	47.5	52.6	57.5	59.4	61.1	40.1	46.6	51.1	54.0	56.7	
	2000	40.7	46.1	50.1	51.5	51.7	46.4	51.6	56.4	58.4	60.7	40.2	46.6	50.9	53.9	56.7	
	4000	35.9	42.3	46.7	48.3	48.3	41.2	48.0	52.8	55.4	57.8	37.6	45.1	50.1	53.8	56.1	
	8000	27.8	35.6	41.6	43.4	43.4	31.1	39.1	44.9	48.4	50.4	27.9	35.4	41.6	46.3	48.6	

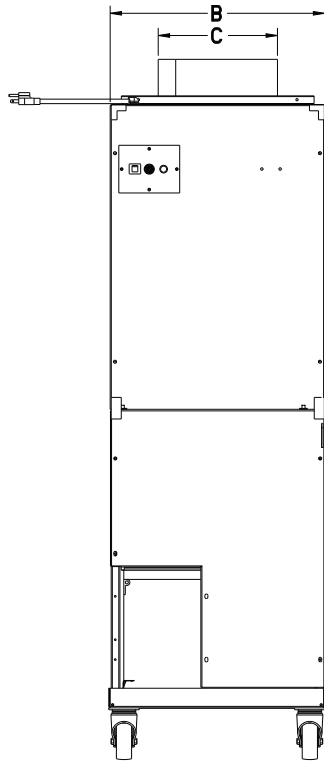
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FN1AAF 005 Size Detailed Dimensions - English



TOP VIEW (500CFM)

TOP VIEW (1500CFM)

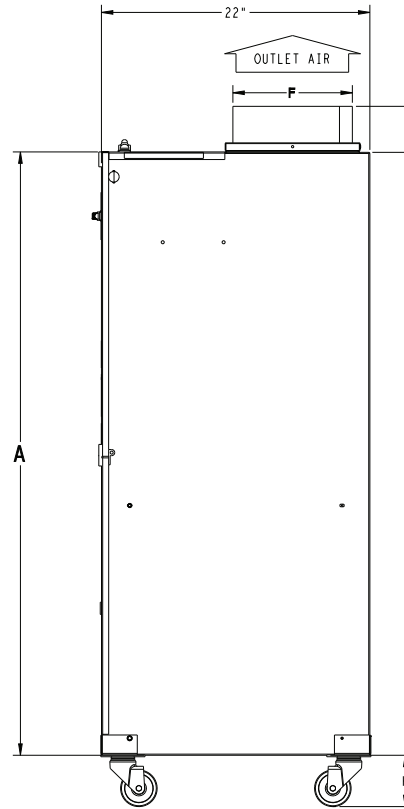


INLET AIR
FRONT VIEW

UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	H	SHIPPING WT (LBS)
FN1AAF005000	A	X	49 5/8"	17 5/8"	10"	15 1/2"	19 13/16"	10"	3 3/4"	3 5/8"	125

115-1-60

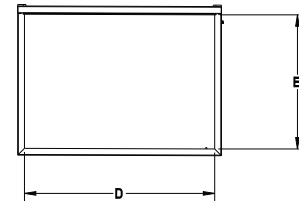
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RIGHT SIDE VIEW

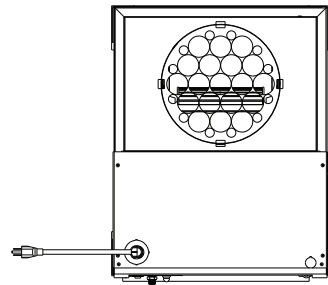
NOTE:

- SERIES DESIGNATION IS THE 4TH POSITION OF UNIT PRODUCT NUMBER
- ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.
- ALLOW 21" FROM FRONT FOR SERVICE
- POWER CORD IS 10 FEET, 3 METERS LONG

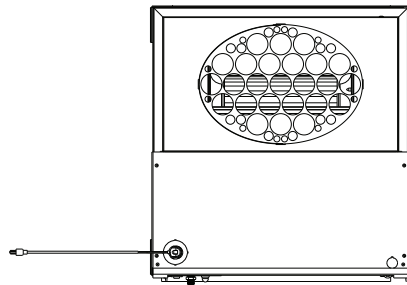


BOTTOM VIEW

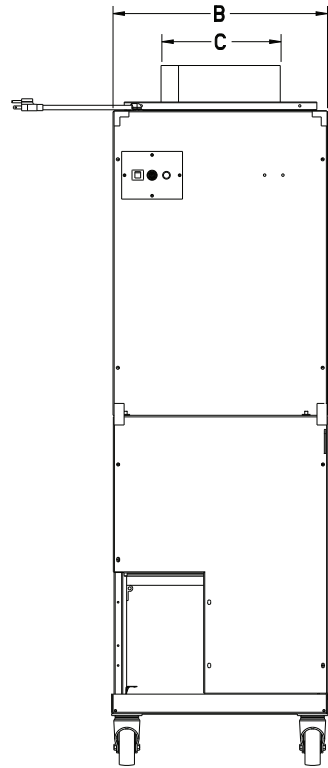
FN1AAF 005 Size Detailed Dimensions - Metric



TOP VIEW (500CFM)



TOP VIEW (1500CFM)

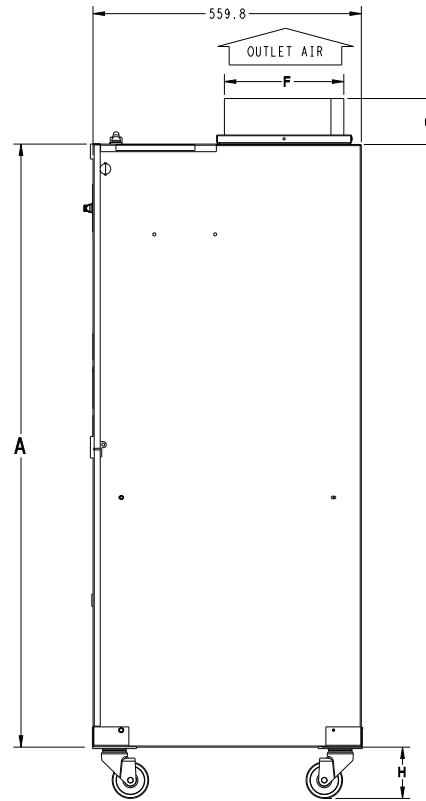


INLET AIR
FRONT VIEW

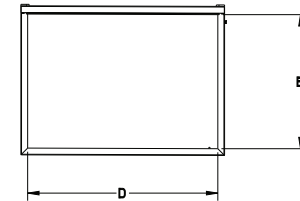
UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	H	SHIPPING WT (LBS)
FN1AAF005000	A	X	1260.5	447.7	254	393.7	503.5	254	96	92	125

115-1-60

X=YES
O=NO



RIGHT SIDE VIEW



BOTTOM VIEW

NOTE:

1. SERIES DESIGNATION IS THE 4TH POSITION OF UNIT PRODUCT NUMBER
2. ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.
3. ALLOW 21" FROM FRONT FOR SERVICE
4. POWER CORD IS 10 FEET, 3 METERS LONG

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FN1AAF 006/015 Size Detailed Dimensions - English

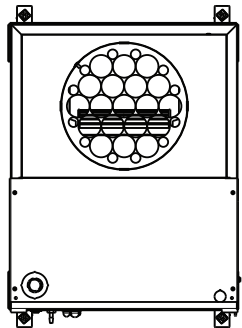
UNIT	SERIES	ELECTRICAL CHARACTERISTICS		A	B	C	D	E	F	G	H	SHIPPING WT (LBS)
FN1AAF006000	A	X		49 5/8"	17 5/8"	10"	15 1/2"	19 13/16"	10"	3 3/4"	3 5/8"	125
FN1AAF015000	A	X		53 7/16"	21 1/8"	13 3/8"	19"	19 13/16"	10"	3 3/4"	3 5/8"	150

115-1-60

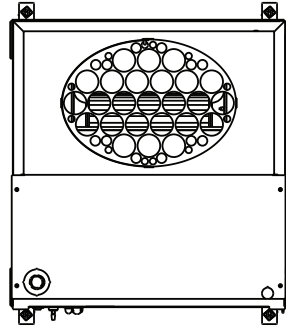
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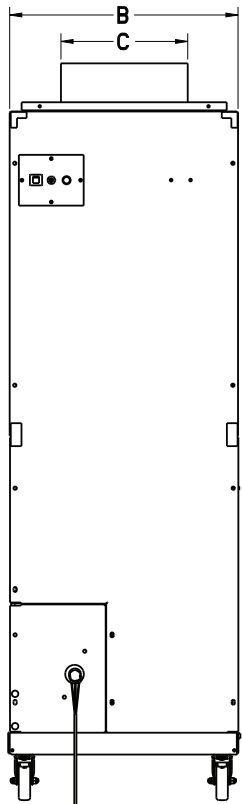
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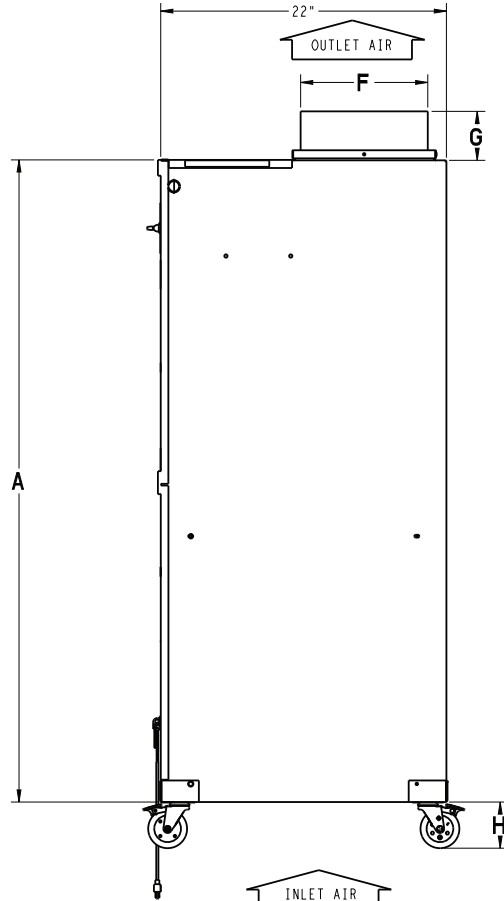
TOP VIEW (600CFM)



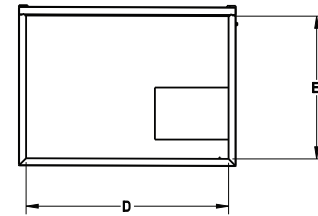
TOP VIEW (1500CFM)



FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW

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FN1AAF 006/015 Size Detailed Dimensions - Metric

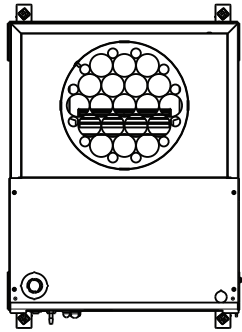
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FN1AAF006000	A	X		1260.5	447.7	254	393.7	503.5	254	96	92	125
FN1AAF015000	A	X		1357.3	536.5	340	482.7	503.5	254	96	92	150

115-1-60

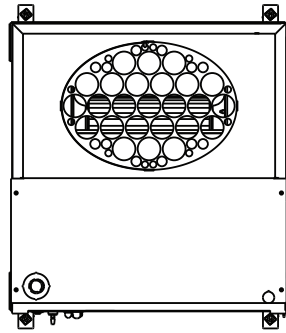
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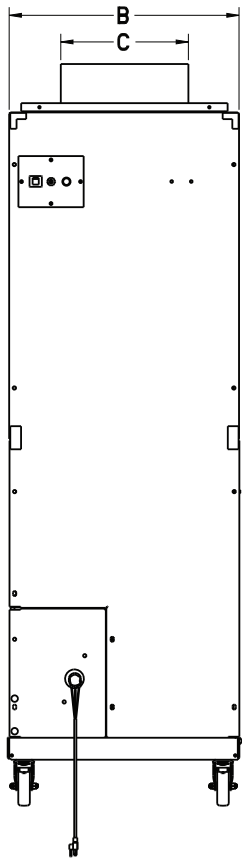
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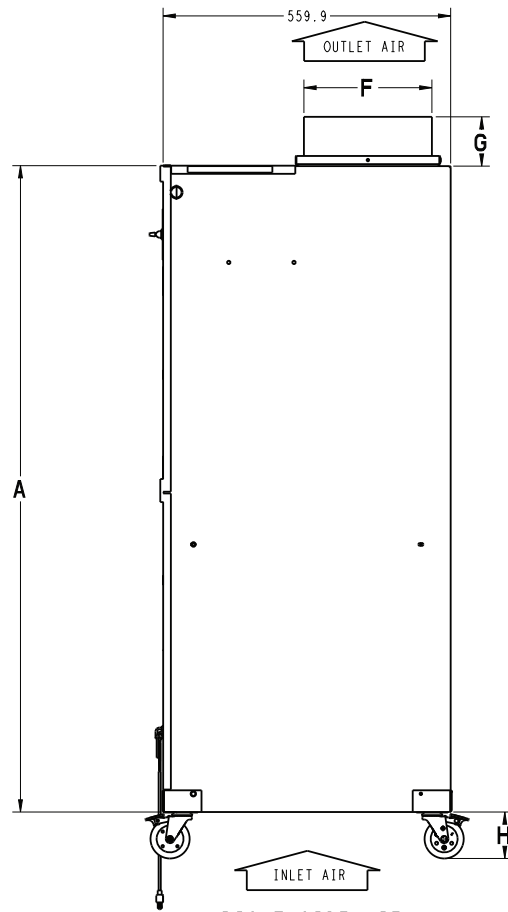
TOP VIEW (600CFM)



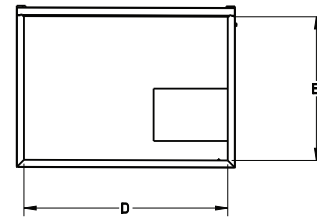
TOP VIEW (1500CFM)



FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW

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Table 6 – Accessories

Description	P/N	Used On Models
Diffuser for Air Scrubber - Small	KFADG0101SML	005, 006
Diffuser for Air Scrubber - Large	KFADG0101LRG	015

NOTES PAGE