

# 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
<b>Product</b> F = Fan Unit									
<b>Type</b> N = Negative Air									
<b>Position</b> 1 = Upflow									
<b>Series</b> A = Initial Series									
<b>Electrical</b> A = 115V, 60 Hz, 1-phase									
<b>Cabinet</b> F = Single-piece Cabinet									
							<b>Heater</b> 00 = no heater		
							<b>Coil Type</b> 0 = no coil		
							<b>Capacity</b> 005 = 500 cfm 006 = 600 cfm 015 = 1500 cfm		

**Table 2 – FN1AAF Basic Dimensional Data**

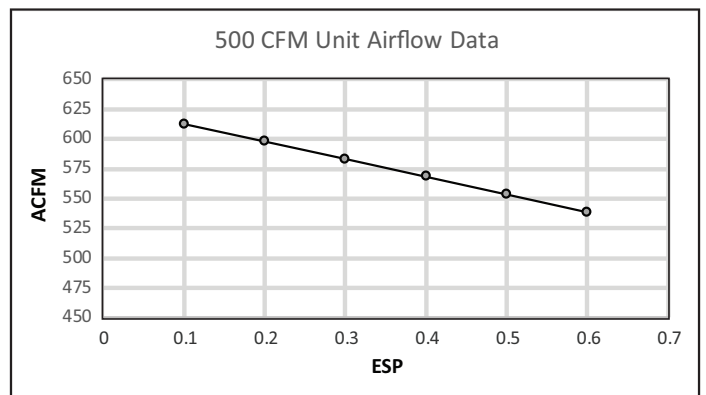
Model Size	Dimensions- inches (mm)			Unit Operating Weight lbs (kg)
	Height*	Width	Depth	
005, 006	49-5/8 (1260.5)	17-5/8 (447.7)	22-1/16 (560.4)	125 (56.7)
015	53-7/16 (1357.3)	21-1/8 (536.6)	22-1/16 (560.4)	150 (68.0)

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

**Table 3 – Specifications**

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

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



**Fig. 3 – Static Pressure - 005 Size**

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

A200225

Unit Airflow Data (CFM)								
Switch Setting	Motor Tap Number	External Static Pressure (ESP)						
		0.01*	0.1	0.2	0.3	0.4	0.5	0.6
Alternate 1	5	731	706	685	664	643	624	606
High	4	524	496	471	446	419	394	370
Medium	3	428	396	367	335	309	280	254
Alternate 2	2	350	320	287	254	224	195	162
Low	1	248	216	179	140			

\* CFM with accessory Air Diffuser (no adapter plate)

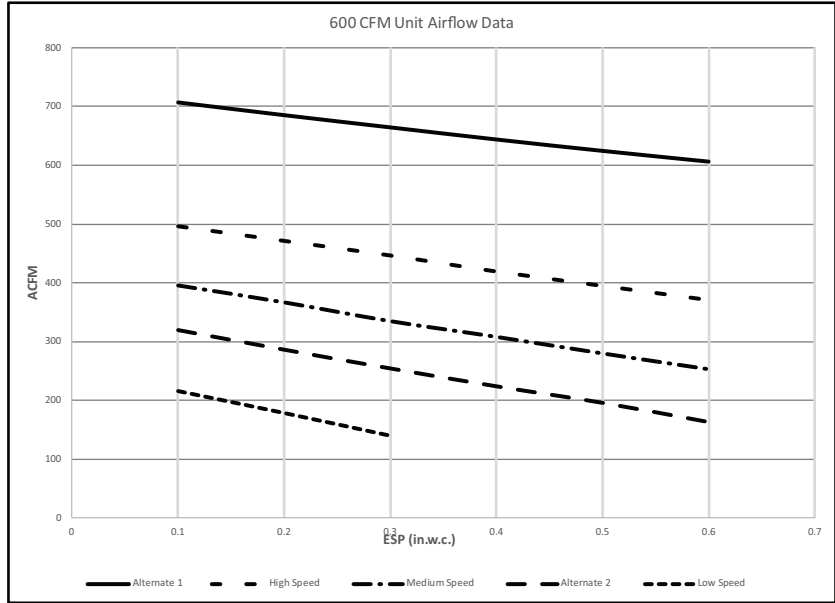


Fig. 4 – Static Pressure - 006 Size

A200420A

Unit Airflow Data (CFM)								
Switch Setting	Motor Tap Number	External Static Pressure (ESP)						
		0.01*	0.1	0.2	0.3	0.4	0.5	0.6
Alternate 1	5	1462	1342	1315	1289	1264	1238	1212
High	4	1280	1201	1179	1158	1139	1117	1097
Medium	3	1104	1037	1013	992	967	946	924
Alternate 2	2	885	826	798	772	745	717	692
Low	1	637	583	552	522	487	454	422

\* CFM with accessory Air Diffuser (no adapter plate)

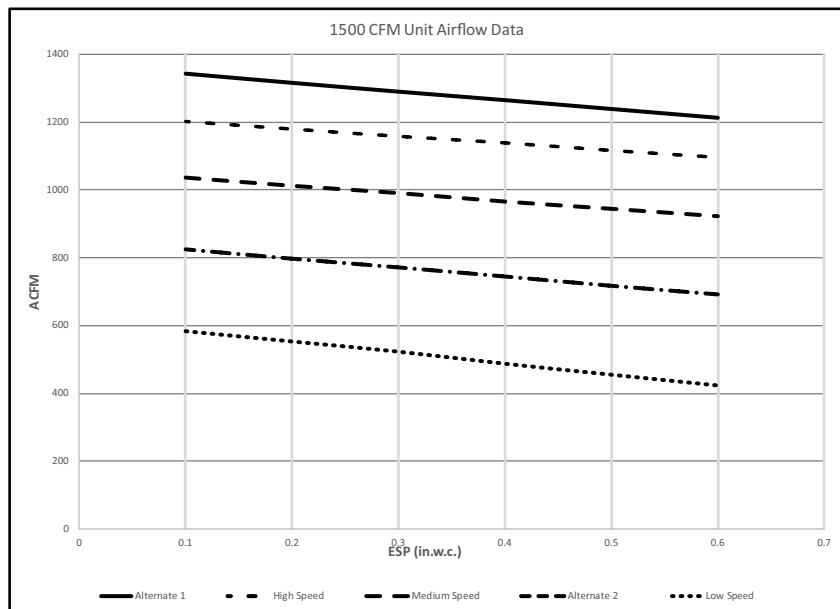


Fig. 5 – Static Pressure - 015 Size

A200253A

1. Airflow based upon clean pre-filter at 115V with factory-approved HEPA filter.

2. Measured with adapter plate installed

## 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**

<b>005 Model</b>					
<b>Motor Tap*</b>	<b>Switch Position</b>	<b>Nominal Airflow†</b>	<b>as NAM (dB)</b>	<b>as Scrubber (dB)</b>	<b>with Accessory Diffuser (dB)</b>
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
<b>006 Model</b>					
<b>Motor Tap</b>	<b>Switch Position</b>	<b>Airflow</b>	<b>as NAM (dB)</b>	<b>as Scrubber (dB)</b>	<b>with Accessory Diffuser (dB)</b>
1	Low	200	39	41	39
2		300	43	46	43
3	Medium	400	45	49	46
4	High	500	49	52	50
5		700	51	58	56
<b>015 Model</b>					
<b>Motor Tap</b>	<b>Switch Position</b>	<b>Airflow</b>	<b>as NAM (dB)</b>	<b>as Scrubber (dB)</b>	<b>with Accessory Diffuser (dB)</b>
1	Low	600	51	53	49
2		800	56	59	55
3	Medium	1050	60	63	59
4	High	1200	61	65	62
5		1350	61	67	64

\*. The factory-set low and medium airflow can be moved to Speed Tap 2 or Speed Tap 5 airflow respectively, by removing the upper panel and moving the motor pin selection. Refer to Operation and Maintenance manual for procedure.

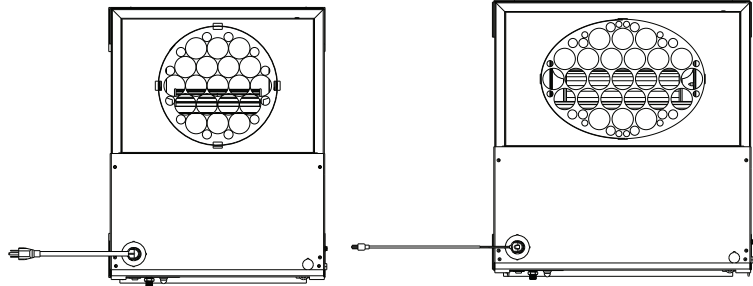
†. Airflow measured at 0.10 ESP (external static pressure). For other ESP values, see Static Pressure tables above.

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
<b>005 SIZE</b>	<b>OA (dB(A))</b>	48	51	53	55	55	54	57	59	61	62	51	54	57	59	60
	<b>Octave (dB(A))</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>
	<b>125</b>	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
	<b>250</b>	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
	<b>500</b>	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
	<b>1000</b>	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
	<b>2000</b>	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
	<b>4000</b>	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
	<b>8000</b>	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
<b>006 SIZE</b>	<b>Hz</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>
	<b>OA (dB(A))</b>	39	43	46	49	51	41	46	49	52	58	39	43	46	50	56
	<b>Octave (dB(A))</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>
	<b>125</b>	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
	<b>250</b>	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
	<b>500</b>	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
	<b>1000</b>	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
	<b>2000</b>	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
	<b>4000</b>	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
	<b>8000</b>	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
<b>015 SIZE</b>	<b>Hz</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>
	<b>OA (dB(A))</b>	51	56	60	61	61	53	59	63	65	67	49	55	59	62	64
	<b>Octave (dB(A))</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>	<b>Speed 1</b>	<b>Speed 2</b>	<b>Speed 3</b>	<b>Speed 4</b>	<b>Speed 5</b>
	<b>125</b>	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
	<b>250</b>	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
	<b>500</b>	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
	<b>1000</b>	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
	<b>2000</b>	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
	<b>4000</b>	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
	<b>8000</b>	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

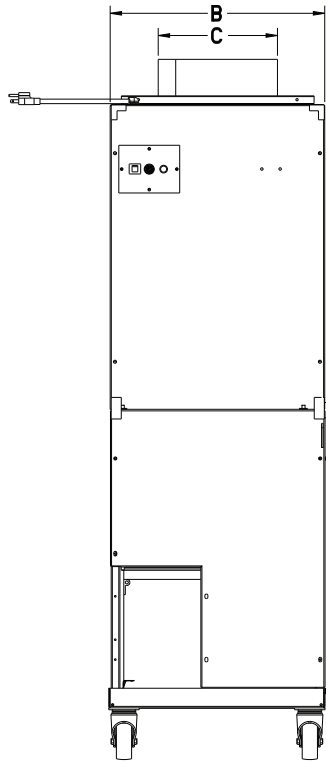
Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

### FN1AAF 005 Size Detailed Dimensions - English



TOP VIEW (500CFM)

TOP VIEW (1500CFM)

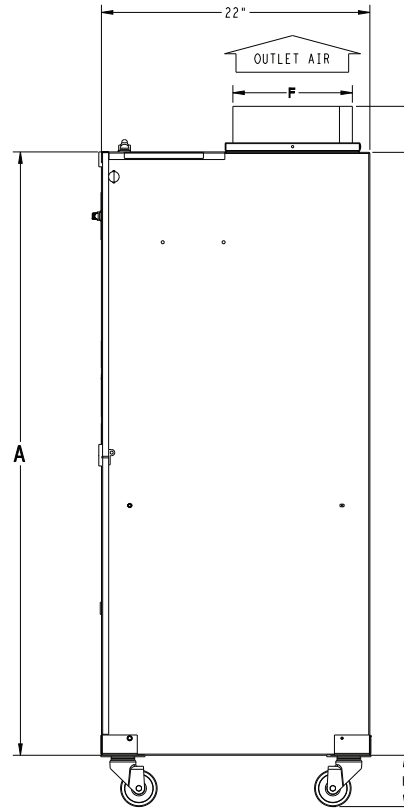


INLET AIR  
FRONT VIEW

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

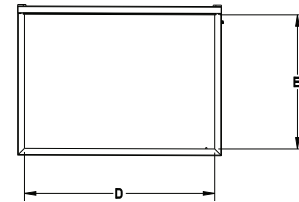
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O=NO



RIGHT SIDE VIEW

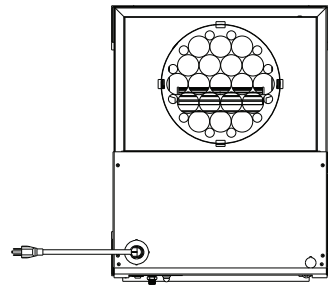
NOTE:

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

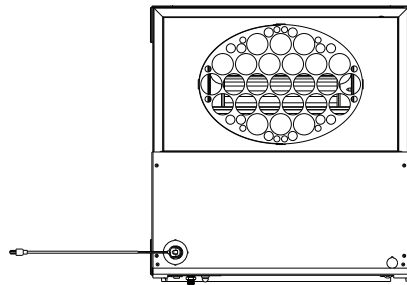


BOTTOM VIEW

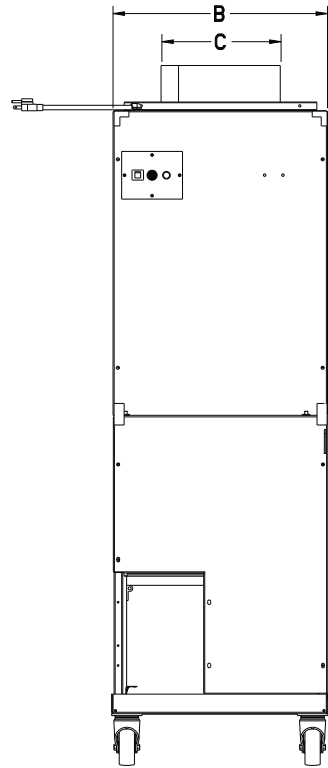
### FN1AAF 005 Size Detailed Dimensions - Metric



TOP VIEW (500CFM)



TOP VIEW (1500CFM)

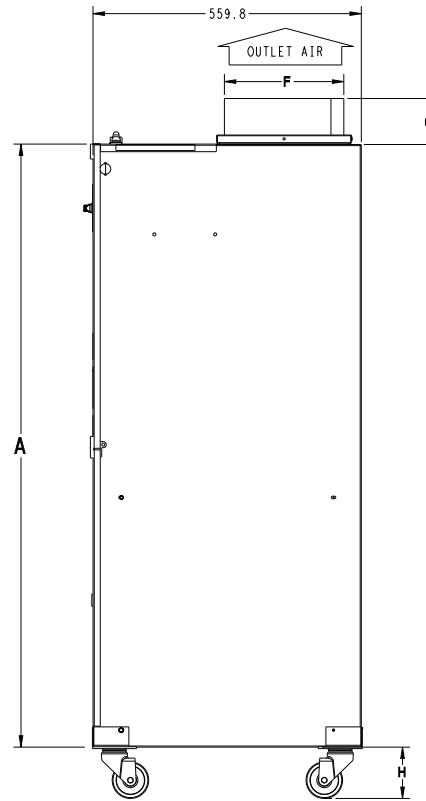


INLET AIR  
FRONT VIEW

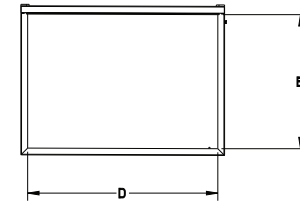
UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	H	SHIPPING WT (LBS)
FN1AAF005000	A	X	1260.5	447.7	254	393.7	503.5	254	96	92	125

115-1-60

X=YES  
O=NO



RIGHT SIDE VIEW



BOTTOM VIEW

NOTE:

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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

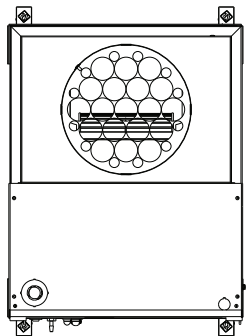
UNT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	H	SHIPPING WT (LBS)
FN1AAF006000	A,B,C	X	49 5/8"	17 5/8"	10"	15 1/2"	19 13/16"	10"	3 3/4"	3 5/8"	125
FN1AAF015000	A,C	X	53 7/16"	21 1/8"	13 3/8"	19"	19 13/16"	10"	3 3/4"	3 5/8"	150

115-1-60

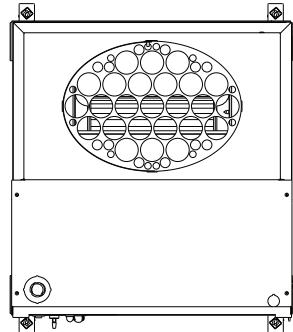
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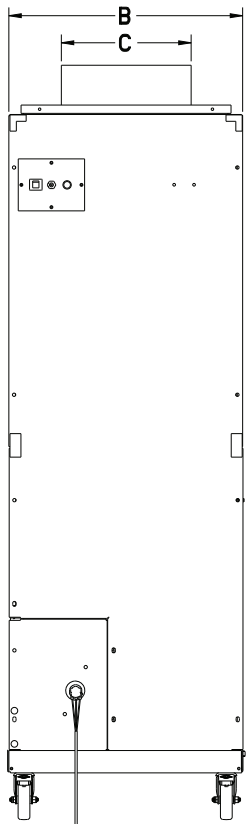
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- ALLOW 21" FROM FRONT FOR SERVICE
- POWER CORD IS 10 FEET, 3 METERS LONG



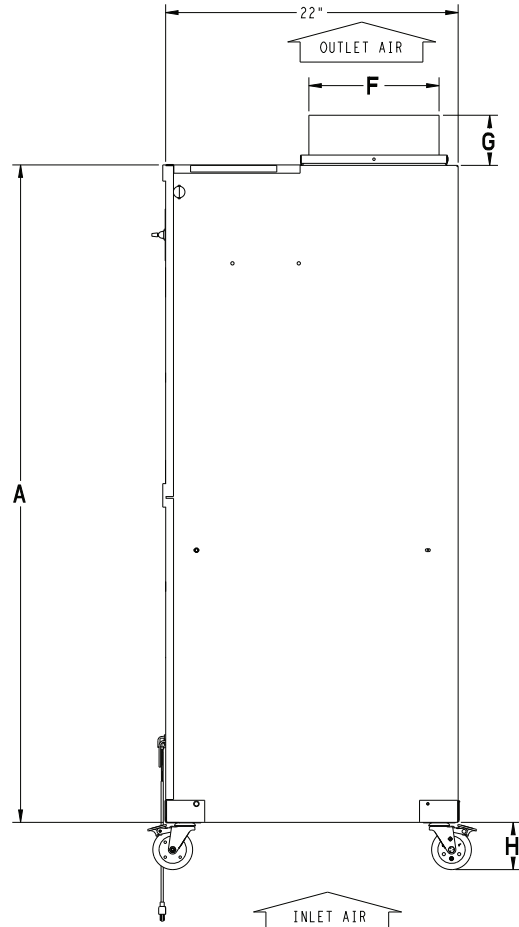
TOP VIEW (600CFM)



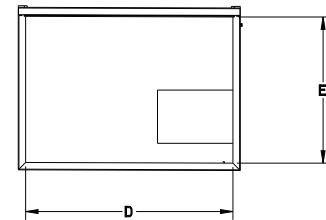
TOP VIEW (1500CFM)



FRONT VIEW



RIGHT SIDE VIEW

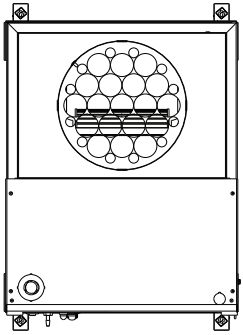


BOTTOM VIEW

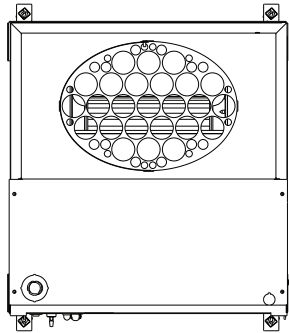
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### FN1AAF 006/015 Size Detailed Dimensions - Metric



TOP VIEW (600CFM)



TOP VIEW (1500CFM)

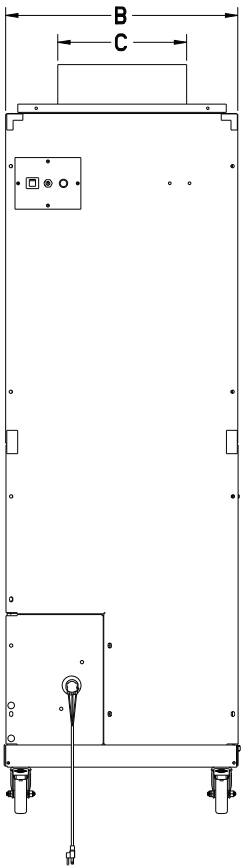
UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	H	SHIPPING WT (LBS)
FN1AAF006000	A,B,C	X	1260.5	447.7	254	393.7	503.5	254	96	92	125
FN1AAF015000	A,C	X	1357.3	536.5	340	482.7	503.5	254	96	92	150

115-1-60

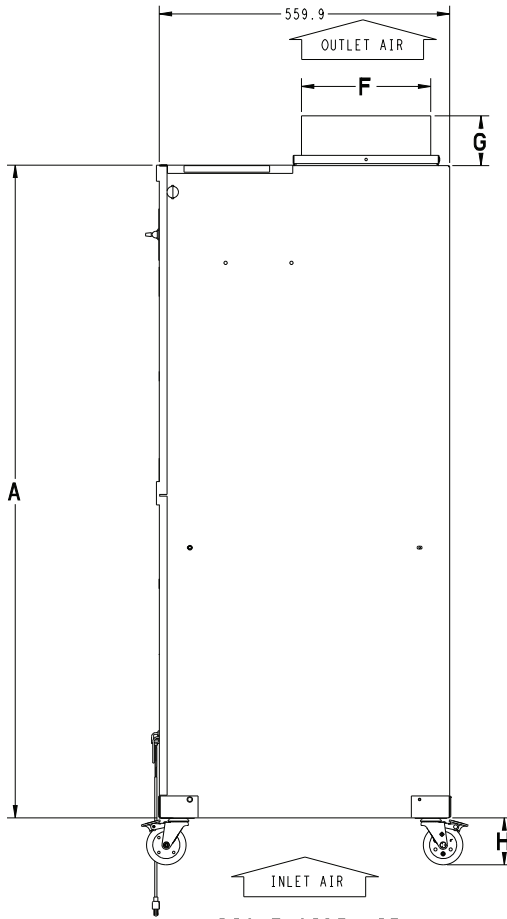
X=YES  
O=NO

NOTE:

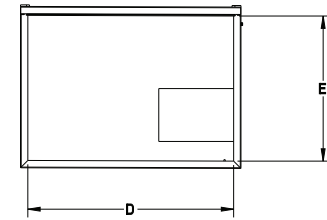
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- ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.
- ALLOW 21" FROM FRONT FOR SERVICE
- POWER CORD IS 10 FEET, 3 METERS LONG



FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

**Table 6 – Accessories**

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