

FN1AAF OptiClean™ Negative Air Machine and Air Scrubber



Product Data



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

A200220KR

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

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 | 1/3 or 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 |

| 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 |

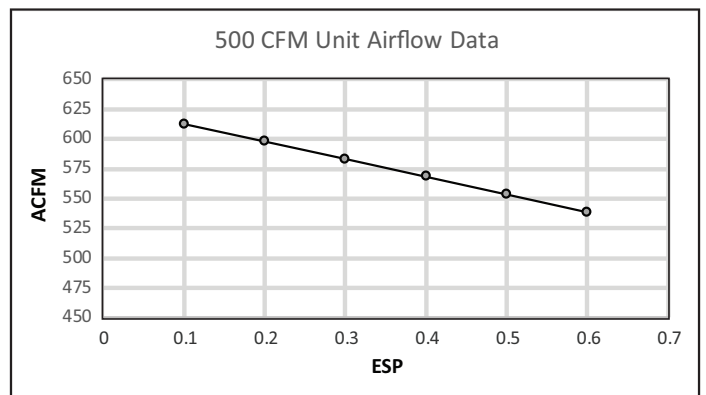


Fig. 3 – Static Pressure - 005 Size

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)

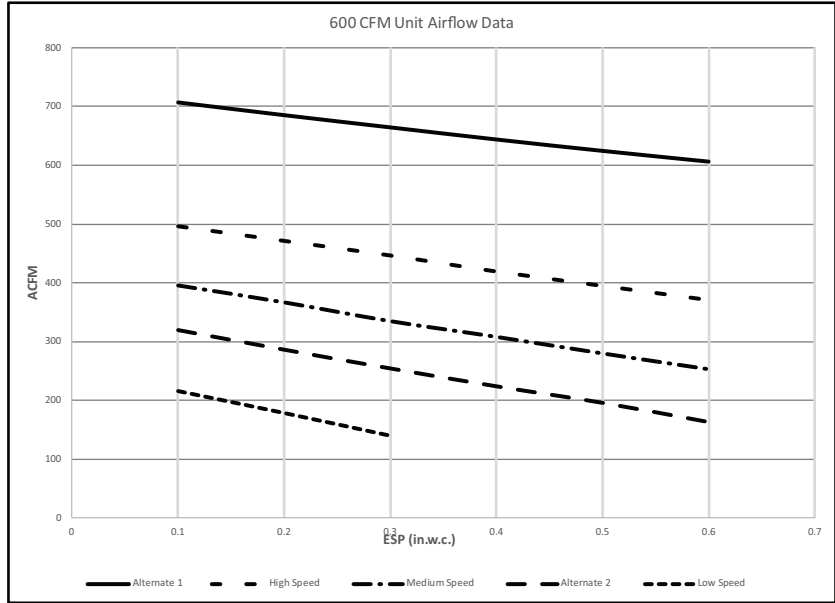


Fig. 4 – Static Pressure - 006 Size

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)

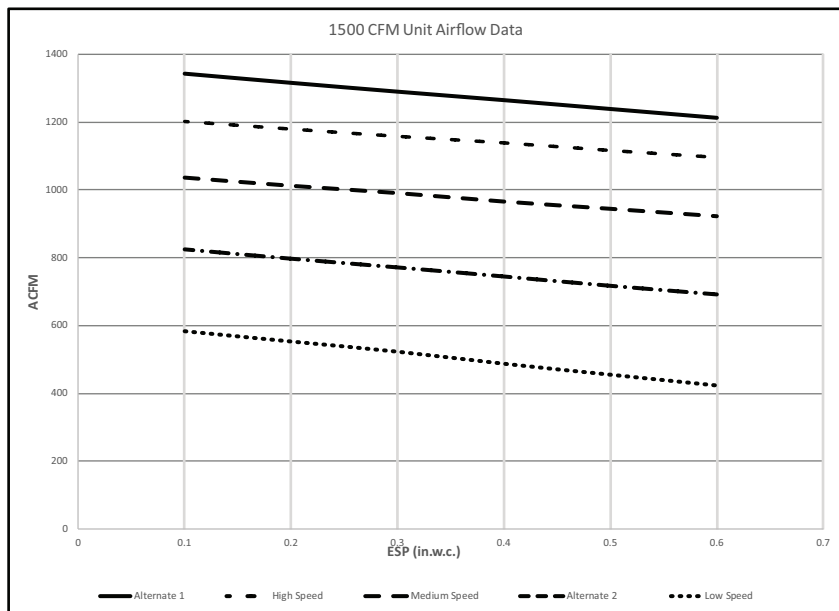


Fig. 5 – Static Pressure - 015 Size

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

| 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 | High | 500 | 49 | 52 | 50 |
| 5 | | 700 | 51 | 58 | 56 |
| 015 Model | | | | | |
| Motor Tap | Switch Position | Airflow | as NAM (dB) | as Scrubber (dB) | with Accessory Diffuser (dB) |
| 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.

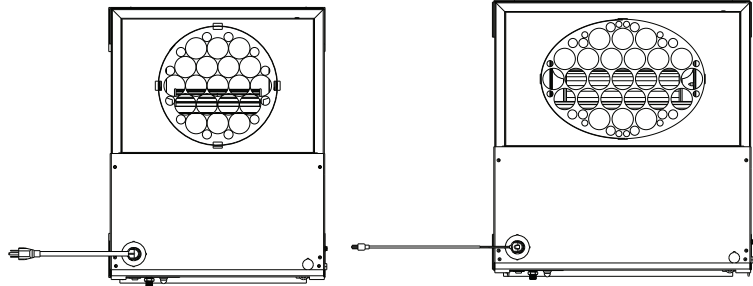
†. Airflow measured at 0.10 ESP (external static pressure). For other ESP values, see Static Pressure tables above.

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 | |
| 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 | |

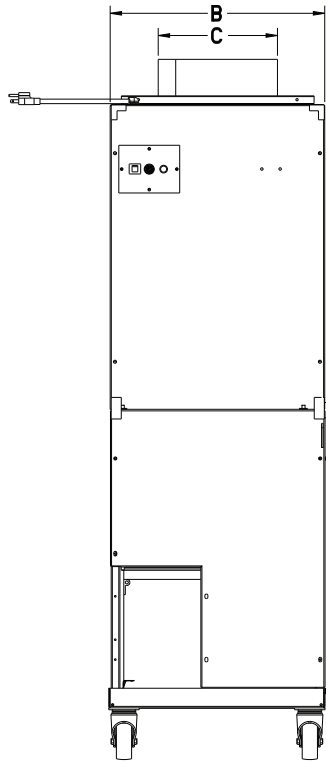
Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

FN1AAF 005 Size Detailed Dimensions - English



TOP VIEW (500CFM)

TOP VIEW (1500CFM)

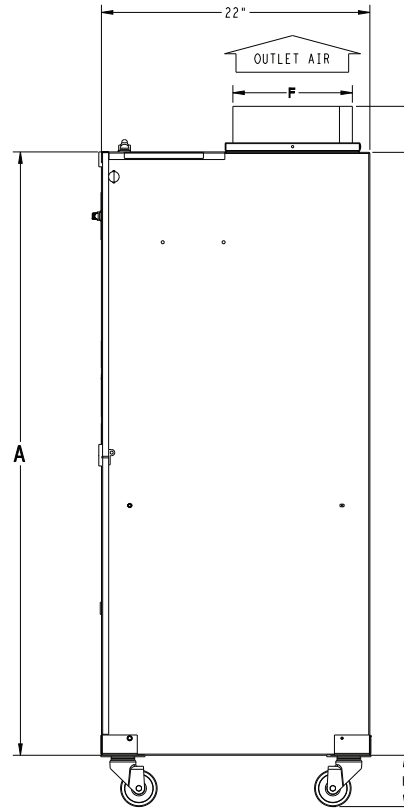


INLET AIR
FRONT VIEW

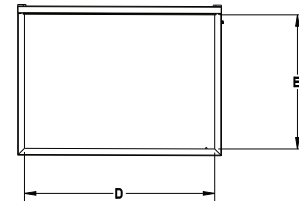
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|--------------|--------|----------------------------|---------|---------|-----|---------|-----------|-----|--------|--------|-------------------|
| FN1AAF005000 | A | X | 49 5/8" | 17 5/8" | 10" | 15 1/2" | 19 13/16" | 10" | 3 3/4" | 3 5/8" | 125 |

115-1-60

X=YES
O=NO



RIGHT SIDE VIEW



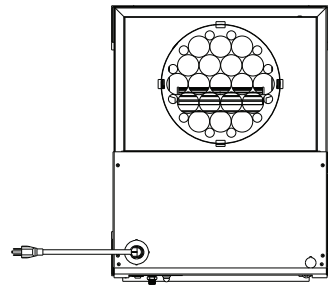
BOTTOM VIEW

NOTE:

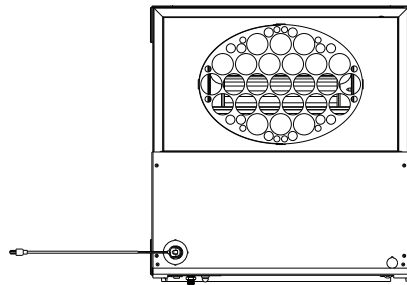
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2. ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.
3. ALLOW 21" FROM FRONT FOR SERVICE
4. POWER CORD IS 10 FEET, 3 METERS LONG

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

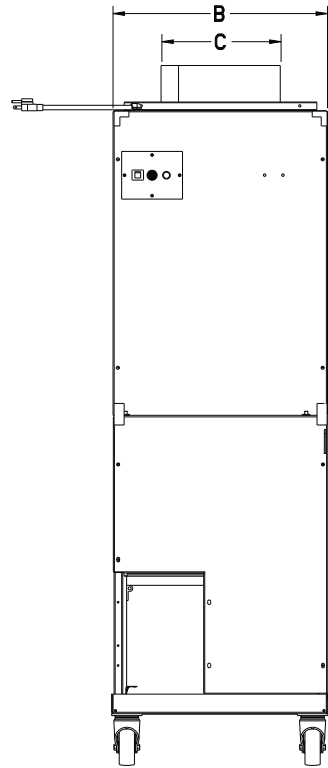
FN1AAF 005 Size Detailed Dimensions - Metric



TOP VIEW (500CFM)



TOP VIEW (1500CFM)

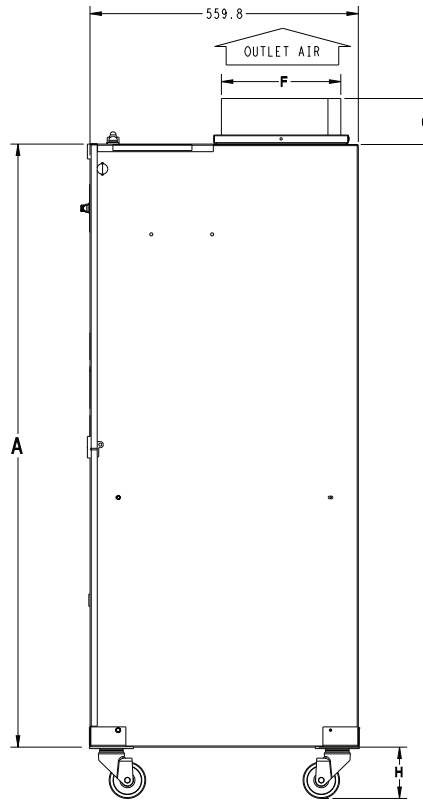


INLET AIR
FRONT VIEW

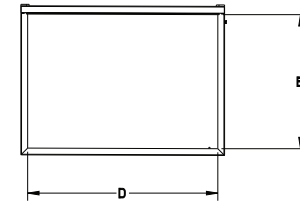
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|--------------|--------|----------------------------|--------|-------|-----|-------|-------|-----|----|----|-------------------|
| FN1AAF005000 | A | X | 1260.5 | 447.7 | 254 | 393.7 | 503.5 | 254 | 96 | 92 | 125 |

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.
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4. POWER CORD IS 10 FEET, 3 METERS LONG

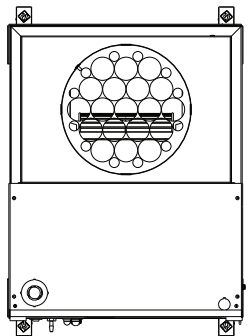
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FN1AAF 006/015 Size Detailed Dimensions - English

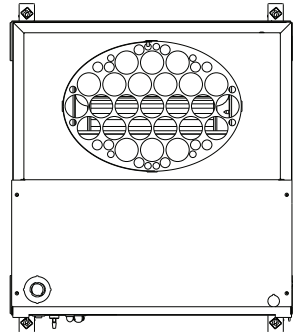
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|--------------|--------|----------------------------|----------|---------|---------|---------|-----------|-----|--------|--------|-------------------|
| FN1AAF006000 | A,B,C | X | 49 5/8" | 17 5/8" | 10" | 15 1/2" | 19 13/16" | 10" | 3 3/4" | 3 5/8" | 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
 X=YES
 O=NO

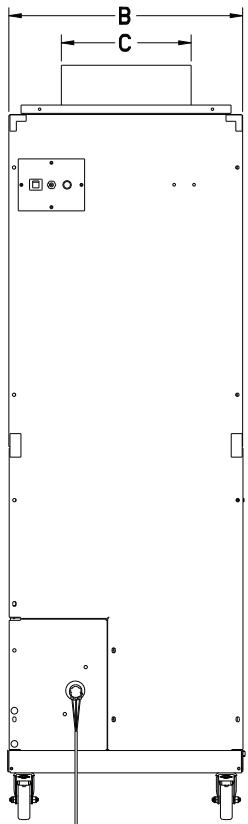
- NOTE:
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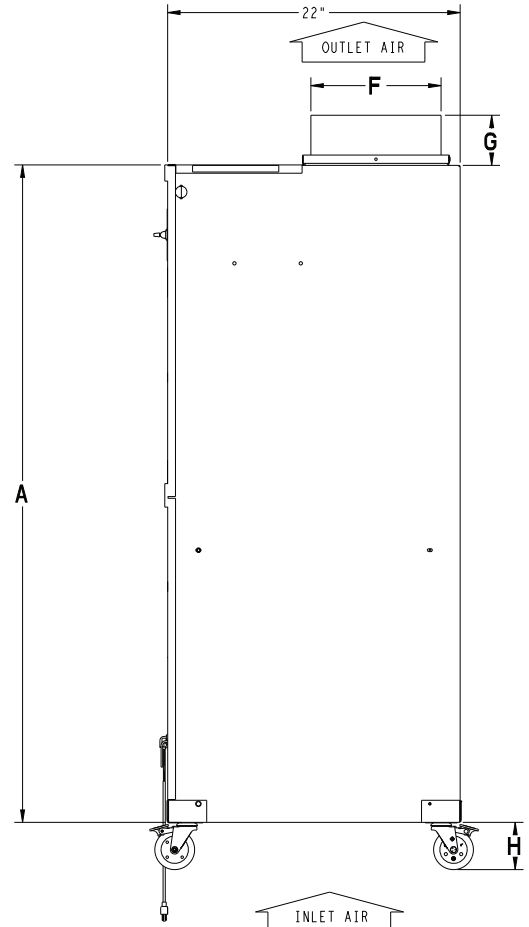
TOP VIEW (600CFM)



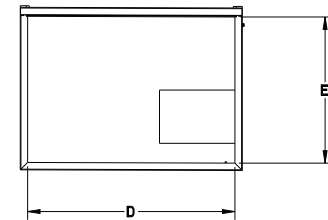
TOP VIEW (1500CFM)



FRONT VIEW



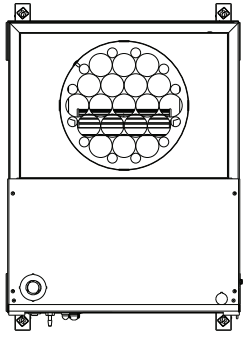
RIGHT SIDE VIEW



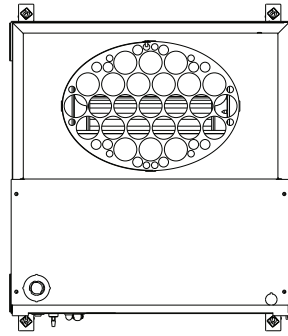
BOTTOM VIEW

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FN1AAF 006/015 Size Detailed Dimensions - Metric



TOP VIEW (600CFM)



TOP VIEW (1500CFM)

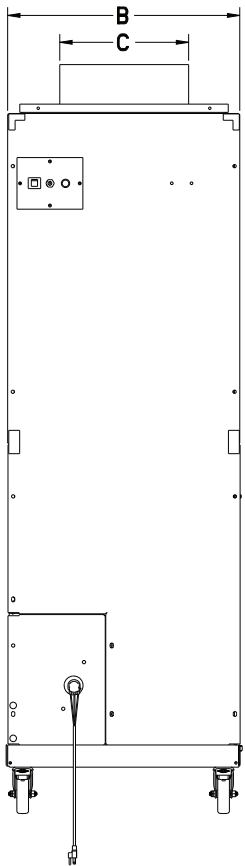
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|--------------|--------|----------------------------|--------|-------|-----|-------|-------|-----|----|----|-------------------|
| FN1AAF006000 | A,B,C | X | 1260.5 | 447.7 | 254 | 393.7 | 503.5 | 254 | 96 | 92 | 125 |
| FN1AAF015000 | A,C | X | 1357.3 | 536.5 | 340 | 482.7 | 503.5 | 254 | 96 | 92 | 150 |

| | | |
|----------|--|--|
| 115-1-60 | | |
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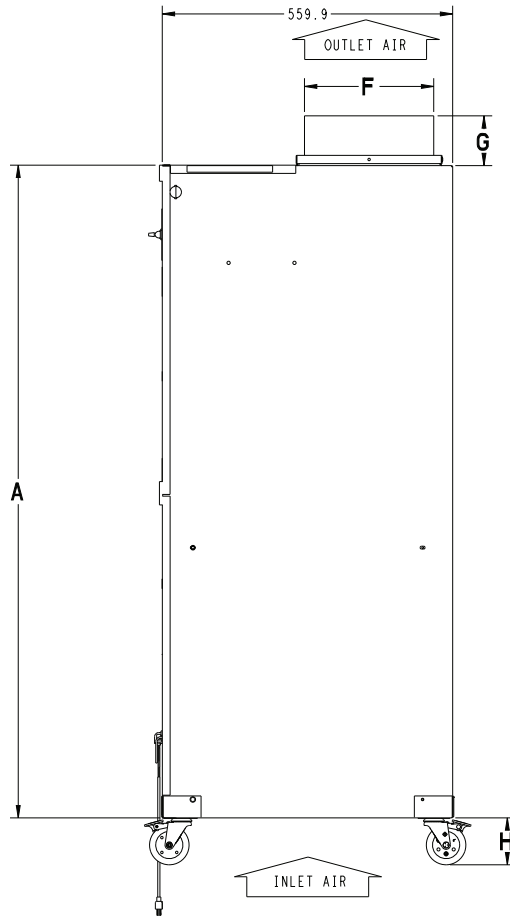
X=YES
O=NO

NOTE:

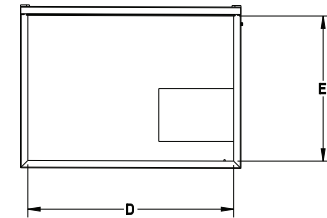
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- ALLOW 21" FROM FRONT FOR SERVICE
- POWER CORD IS 10 FEET, 3 METERS LONG



FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW

Table 6 – Accessories

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