



FN1SXF Carrier OptiClean™ Air Scrubber – 50/60Hz



Quality Assurance
Certificate Reg. No:
04 100 950420



Manufacturer's Name: Saudi Airconditioning Manufacturing Co. Ltd.
Country of origin: Jeddah, Saudi Arabia
Nearest port of embarkation: Jeddah Islamic Port
Product classification: Commercial

Product Data Catalog

FN1SXF – 50/60Hz Carrier OptiClean™ Air Scrubber

The Carrier OptiClean™ Air Scrubber system is a portable solution primarily designed to help convert normal hospital rooms into Airborne Infectious Isolation (AII) rooms.

The Carrier OptiClean™ uses highly efficient filters and a heavy duty, yet quiet motor. Remove contaminated air from the room. the machine is used as an Air Scrubber, pulling air in, removing many contaminants, and discharging cleaner air back into the room.

The Carrier OptiClean™ is designed for commercial applications and conforms with European 2006/42/EC Machinery Directive for essential health and safety.

Contact your local Carrier representative for additional reference materials. www.carrier.com

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Standard Features

- RoHS compliances to directive 2011/65/EU
- Eco-design compliance according to regulation EU 327/2011
- Pre-filter pleated synthetic material, MERV 7
- 99.97% efficient long-life HEPA H13 filter
- Nominal airflow 500 CFM at Tap-5 (0.45" ESP) and Tap-3 (0.0" ESP)
- Vertical design for smaller footprint
- Portable and adaptable to nearly any location
- Heavy duty locking casters for easy and smooth transport
- HEPA filter mounting for air by-pass leakage meeting Class F9 according to EN 1886
- Red lighted indicator to alert user when filters are overloaded (generally means pre-filter requires replacement)
- Separate Green ON, Red OFF switch
- 5 selectable motor speeds for a wide range of airflow
- Power cable access from rear of the unit
- Power socket C14 access from rear panel
- 230V / 1Ph – 50 or 60 Hz Power
- Chassis is made from galvanized steel, pre-painted and fully insulated
- Exhaust transition plate to standard 10-inch round
- One-year limited warranty

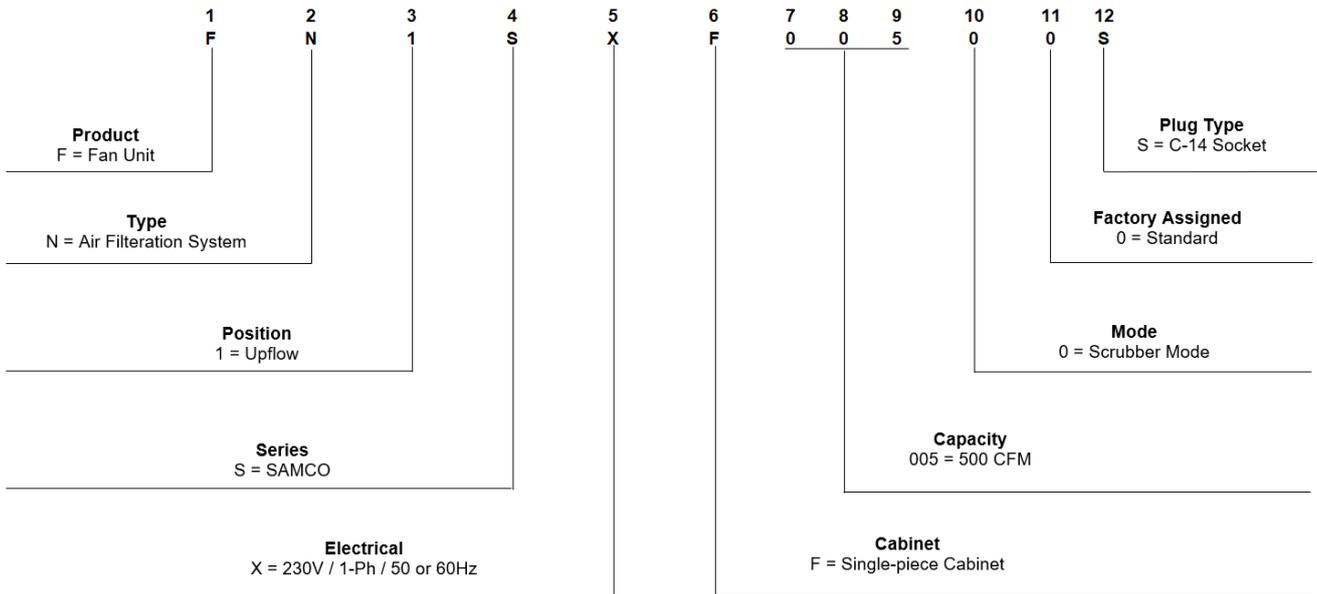
CE Mark and European Regulations Conformity

The products of Carrier OptiClean™ Air Filtration system are in conformity with the below European directives and regulation.



- EHSR: The products fulfilled the requirement in the directive 2006/42/EC - Machinery Directive for essential health and safety requirements
- RoHS 2: Conformity to the restriction of the use of certain hazardous substances in electrical and electronics according to 2011/65/EU for the Restriction of Hazardous Substances Directive
- WEEE: The manufacturer informs the customers about the waste disposal requirements of the electrical and electronic products as in accordance with the directive 2012/19/EU

Model Number Nomenclature



Specifications

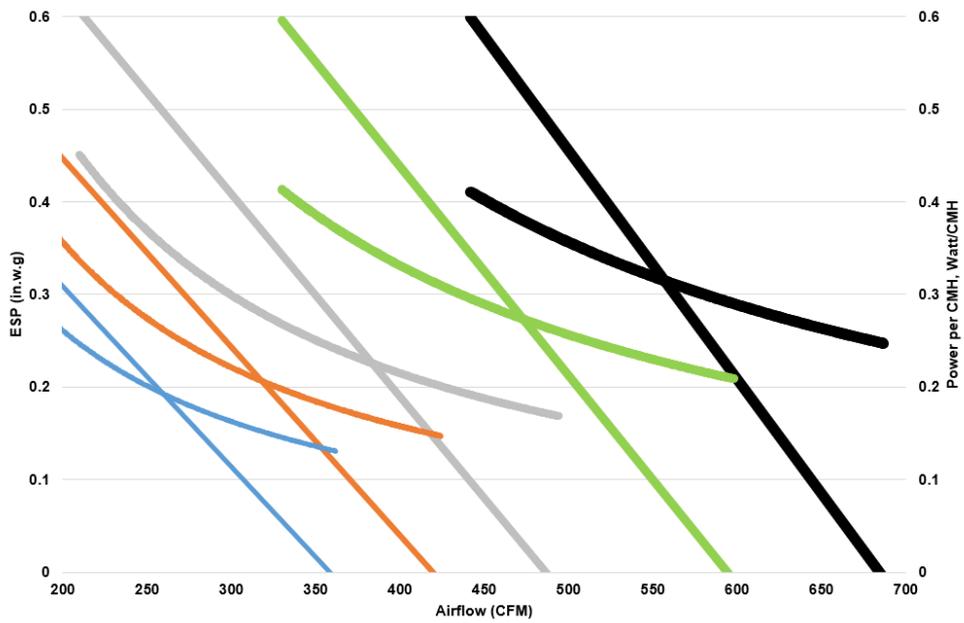
Model Size	005	
Product Trademark	Carrier OptiClean™	
Unit Net Dimensions – cm (H* x W x D)	126.0 x 44.5 x 56.0	
Unit Net Operating Weight - kg	63.0	
Unit Packing Dimensions – cm (H x W x D)	137.0 x 49.0 x 63.0	
Unit Packing Weight - kg	64.0	
Air Discharge	Vertical	
Blower Type	Forward DIDW	
Nominal CFM**	500	
Selectable Speed	5	
Motor Type	Electronically Commutated Motor	
Motor HP	1/2	
Fan Part Number	LA22RA013	
Motor Part Number	HD44AR242SB	
Factory Installed Pre-Filter	Synthetics Pleated MERV 7 - (16" x 20" x 2")	
Factory Installed HEPA Filter	HEPA H13 - (16" x 20" x 12")	
Input Power Supply	1ph / 230V	
Hertz	50/60	
Amps***	3.8	
Eco-design EU 327/2011: Fan Efficiency		
Fan Application	Air Scrubber	Air Scrubber Ducted
Fan Input Power	178 Watt	178 Watt
Motor RPM	1080 RPM	1080 RPM
VSD Installed	No	No
Overall Fan Efficiency	n = 52.3%	n = 54.2%
Fan Efficiency Category	A (Static)	B (Total)
Target Fan Efficiency Grade	N (2015) 44	N (2015) 49
Efficiency Grade	33.0%	37.9%

* Height without casters. Add 10 cm height when casters installed.

** Nominal airflow reference to highest fan speed Tap-5 (0.45" ESP) and Tap-3 (0.0" ESP)

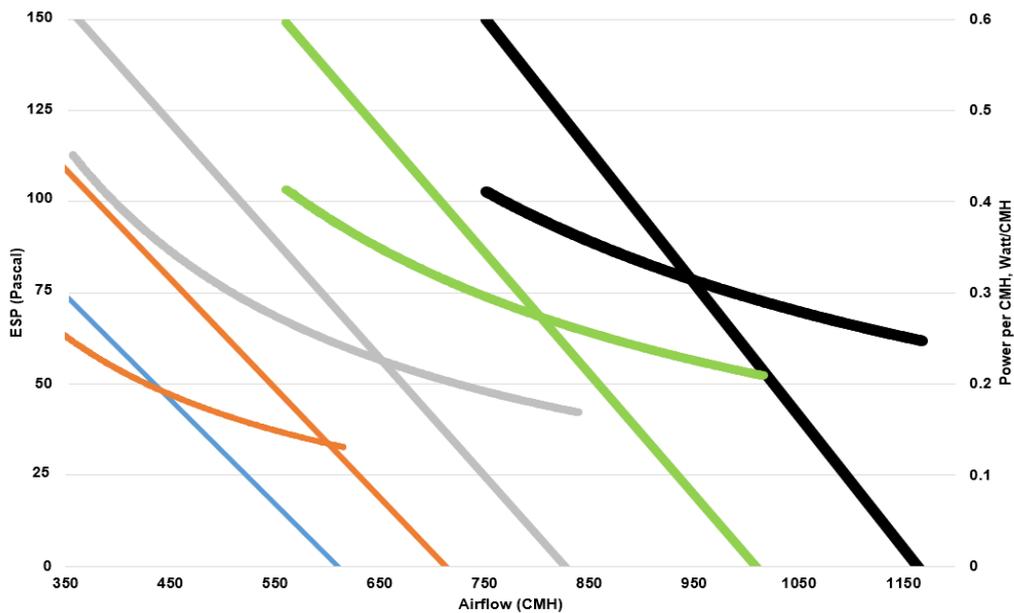
*** Max. input current for scrubber mode at zero ESP

Airflow and Power (CFM)



ESP	Inches of Water Gauge						
	0.0	0.1	0.2	0.3	0.4	0.5	0.6
Speed	687	641	603	563	524	482	442
Tap-5	598	547	504	459	416	374	330
Tap-4	494	435	389	348	303	268	210
Tap-3	424	367	318	273	222	177	
Tap-2	362	305	253	201	158		
Tap-1							

Airflow and Power (CMH)



ESP	Pascal						
	0	25	50	75	100	125	150
Speed	1168	1090	1025	957	891	819	751
Tap-5	1017	930	857	780	707	636	561
Tap-4	840	740	661	592	515	456	357
Tap-3	721	624	541	464	377	301	
Tap-2	615	519	430	342	269		
Tap-1							

- Scrubber Mode at nominal airflow (and lower)
- Scrubber Mode at higher airflow
- Ducted Scrubber Mode at nominal airflow (and lower)
- Ducted Scrubber Mode at higher airflow

Note: Airflow with factory installed filters MERV 7, HEPA H13, and standard connector plate.

Scrubber Mode Application - Airflow and Noise Level

Fan Selector is set at factory to point at Tap-3. Scrubber operation at Tap-3 to deliver nominal airflow 494 CFM / 840 CMH, noise level LpA at 52.6 dBA measured at 1.5-meter distance.

Sound Pressure (dBA)

ESP	Pascal
Speed	0
Tap-5	60.2
Tap-4	56.9
Tap-3	52.6
Tap-2	50.1
Tap-1	46.7

Noise Level

Scrubber + Standard Connector Plate	Speed	Airflow		Octave Band – Lw (dB)								Lp (dBA)
		CFM	CMH	63	125	250	500	1K	2K	4K	8K	
	Tap-5	687	1168	70.5	68.5	65.5	63.5	64.5	61.5	59.5	57.5	60.2
	Tap-4	598	1017	67.4	65.4	61.4	59.4	61.4	57.4	56.4	53.4	56.9
	Tap-3	494	840	63.2	61.2	57.2	55.2	56.2	53.2	52.2	49.2	52.6
	Tap-2	424	721	60.7	58.7	54.7	52.7	53.7	50.7	49.7	46.7	50.1
	Tap-1	362	615	57.0	55.0	52.0	50.0	51.0	48.0	46.0	44.0	46.7

Scrubber Mode at nominal airflow (and lower)
 Scrubber Mode at higher airflow

Note:

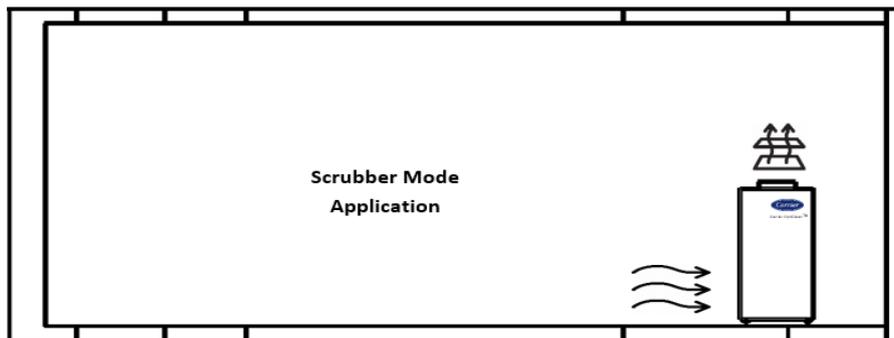
1. Sound pressure (Lp) measured at 1.5 meters distance in front of the unit, tolerance ± 1 dBA
2. Noise level at maximum ESP at respective speed
3. Factory speed tap is set at Tap-3

Scrubber Mode Application at Tap-4 & Tap-5

The products of Carrier OptiClean™ can operate in five different fan speed. Operating Scrubber application at Tap-4 and Tap-5 at which the unit is capable to deliver higher airflow could result to higher noise level. Such an operation is not recommended for the space or room that requires low noise level we recommend to operate in such a scenario as Ducted Scrubber to lower the noise level.



Scrubber Mode Typical Application



Ducted Scrubber Mode Application - Airflow and Noise Level

For Ducted Scrubber mode application, when unit is connected to supply duct to discharge the air back inside the room space (inside the building).

The unit is capable to operate up to the maximum External Static Pressure of 0.6 in.w.g (150 Pascal) when operating at Tap-3/4/5.

Sound Pressure (dBA)

ESP	Pascal						
Speed	0	25	50	75	100	125	150
Tap-5		48.8	48.6	47.6	46.6	42.9	42.8
Tap-4		47.1	46.1	45.3	44.3	40.2	39.3
Tap-3		45.0	43.6	43.1	41.6	36.7	34.1
Tap-2		43.6	42.1	41.2	40.2	32.7	
Tap-1		41.8	39.9	39.9	37.8		

Noise Level

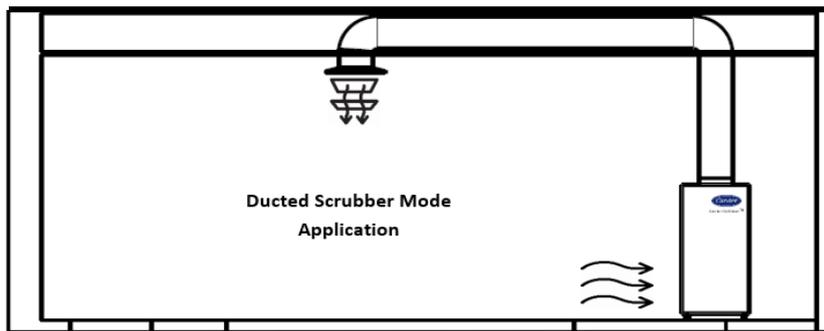
Ducted Scrubber Mode	Speed	Airflow		Octave Band – Lw (dB)								Lp (dBA)
		CFM	CMH	63	125	250	500	1K	2K	4K	8K	
	Tap-5	442	751	53.1	51.1	48.1	46.1	47.1	44.1	42.1	40.1	42.8
Tap-4	330	561	49.6	47.6	44.6	43.6	42.6	39.6	38.6	36.6	39.3	
Tap-3	210	357	44.5	42.5	39.5	38.5	36.5	34.5	33.5	30.5	34.1	
Tap-2	177	301	43.0	41.0	38.0	37.0	36.0	34.0	32.0	30.0	32.7	
Tap-1	158	269	47.7	46.7	43.7	41.7	40.7	38.7	36.7	34.7	37.8	

Ducted Scrubber Mode at nominal airflow (and lower)
 Ducted Scrubber Mode at higher airflow

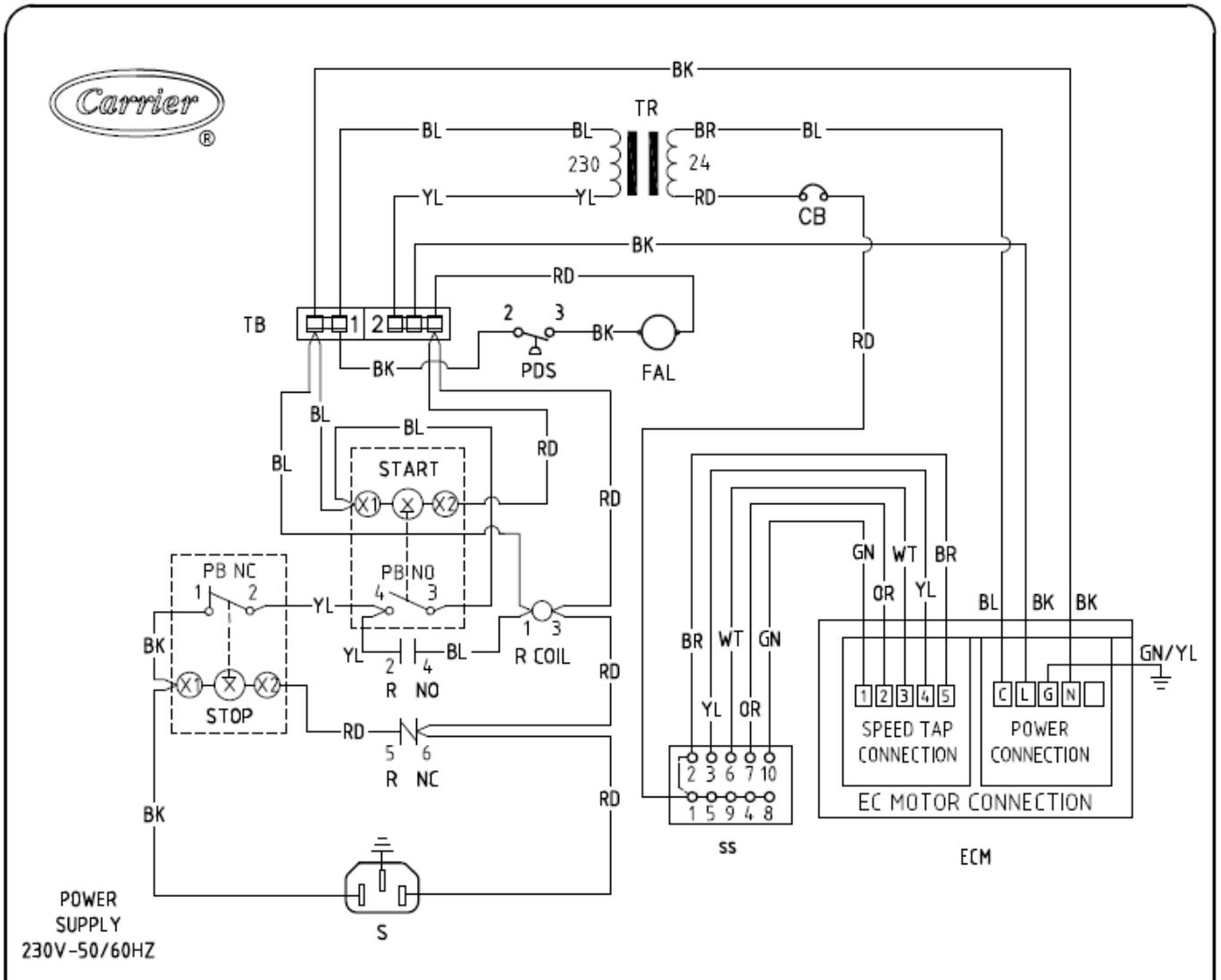
Note:

1. Sound pressure (Lp) measured at 1.5 meters distance in front of the unit, tolerance ± 1 dBA
2. Noise level at maximum ESP at respective speed
3. Factory speed tap is set at Tap-3

Ducted Scrubber Mode Typical Application



Typical Wiring Schematic



NOTES

1. EQUIPMENT TO BE ELECTRICALLY CONNECTED IN ACCORDANCE WITH NEC & LOCAL CODES.
2. IF ANY OF THE ORIGINAL WIRES, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT TYPE WIRE.

WIRE COLOR

BK: BLACK	YL: YELLOW	VIQ : VIOLET
BL: BLUE	GN: GREEN	WT : WHITE
BR: BROWN	OR: ORANGE	GN/YL: GREEN/YELLOW
RD: RED		

LEGEND

CB : CIRCUIT BREAKER	FAL : FILTER ALARM LAMP
ECM : E C MOTOR	PDS : PRESSURE DEFERENTIAL SWITCH
TR : TRANSFORMER (230/24V)	TB : TERMINAL BOARD
S : SOCKET C14	SS : SELECTOR SWITCH
R : RELAY	NC : NORMALLY CLOSE
NO : NOMALLY OPEN	

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WEEE Disposal Requirements

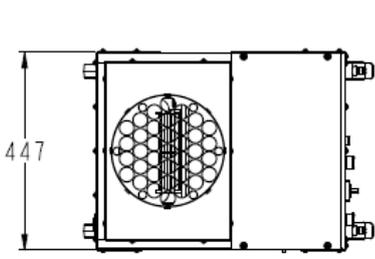


The products of Carrier OptiClean™ Air Scrubber are marked with this symbol. This means that electrical and electronics products shall not be mixed with unsorted household waste. Refer to your relevant local legislation requirement when to dismantle product. Suggest not to dismantle product yourself.

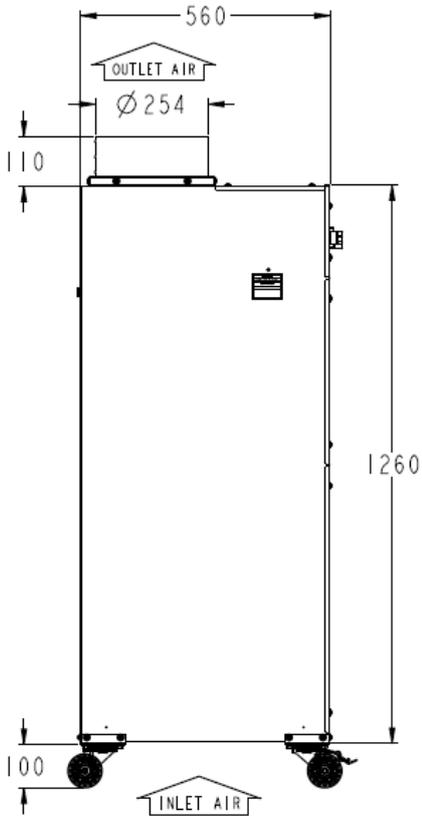
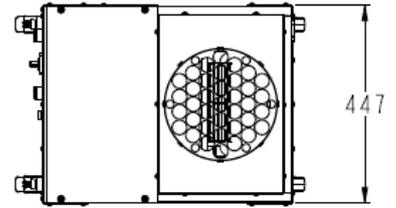
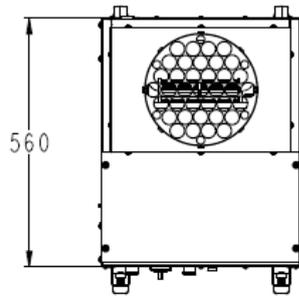
Contact your designated specialized treatment facility whenever legislation applies for reuse, recycle and recovery.

By ensuring product is disposed correctly, will help to prevent potential negative consequences for the environment and human health.

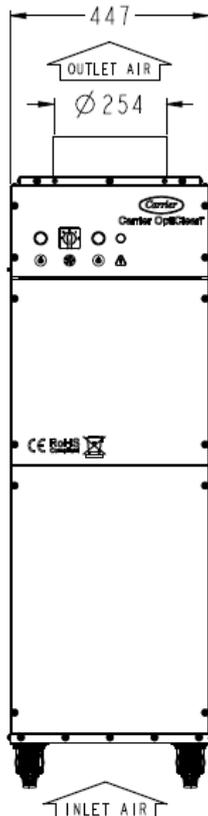
Base Unit Dimensions



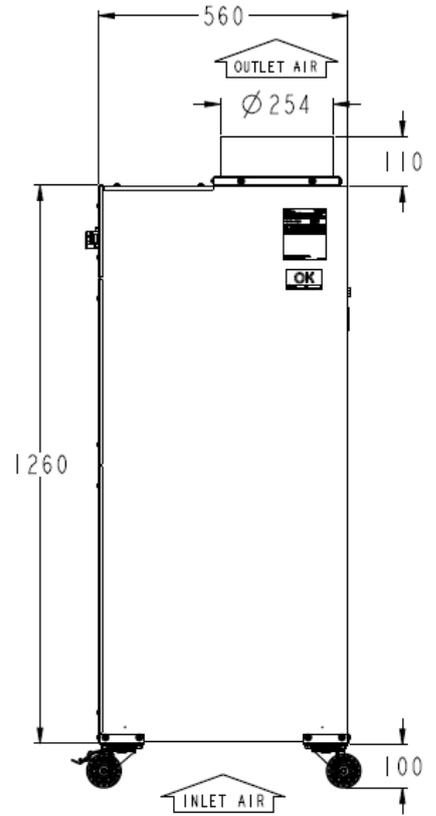
TOP VIEW (500CFM)



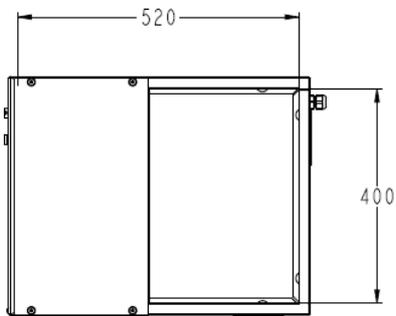
LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW



BOTTOM VIEW

