



ADVANCED COMMERCIAL
CW5000
Energy Recovery Ventilator

PRODUCT
SPECIFICATIONS
& TECHNICAL
DATA

Standard Features



Interior Unit CW5000i



Exterior Unit CW5000e

NOMINAL CAPACITY

3400-5700 CFM

CASING

Double-wall cabinet
White exterior paint, 22-gauge galvanized steel
18-gauge galvanized steel interior walls
Access doors with quarter-turn handles
18-gauge stainless steel drain pan
Drain Connections: 1" NPT
Insulation: 2" (51 mm)

MOUNTING

On roof curb or on platform

ENTHALPY WHEEL

Material: Polymer with desiccant wheel technology
Type: Channel matrix with removable segments
Wheel diameter: 52" (1321 mm)
L-10 class ball bearings
Drive Belt: Urethane



BLOWERS

Quantity: 2

- Forward-curved
- Permanently sealed and lubricated ball bearings
- Power transmission by adjustable pulleys and belts

MOTORS

Type: Inverter duty 10:1, ODP or TEFC, EAct or Premium
Maximum Power: 7.5 hp
Drive Assembly/Blower: On vibration-isolating springs

FILTERS

Type: MERV 8
Quantity: 6 per circuit
Dimensions: 16" x 20" x 4" (406 mm x 508 mm x 102 mm)

ELECTRICAL & CONTROLS

- Start/stop dry contact and general alarm dry contact
- Occupancy control dry contact
- Fan interlock dry contact
- Start/stop dry contact for the wheel (free cooling)
- 24VAC, 20VA power available for accessories
- Access panel with non-fused disconnect (NEMA 4)
- Single-point power connection
- 120, 208, 230 V / 1ph / 60Hz
- 208, 230, 460, 575 V / 3ph / 60Hz

WARRANTY

- Wheel: Limited 2-year warranty
- All Other Covered Components: Limited 2-year warranty

LISTED BY



Optional Features

FROST PREVENTION/CONTROL OPTIONS

Frost control activated by a temperature reference

Set point: 5°F (-15°C)

Internal Pre-Heat by Electric Coil:

- Powered by unit
- Factory calibrated
- SCR control

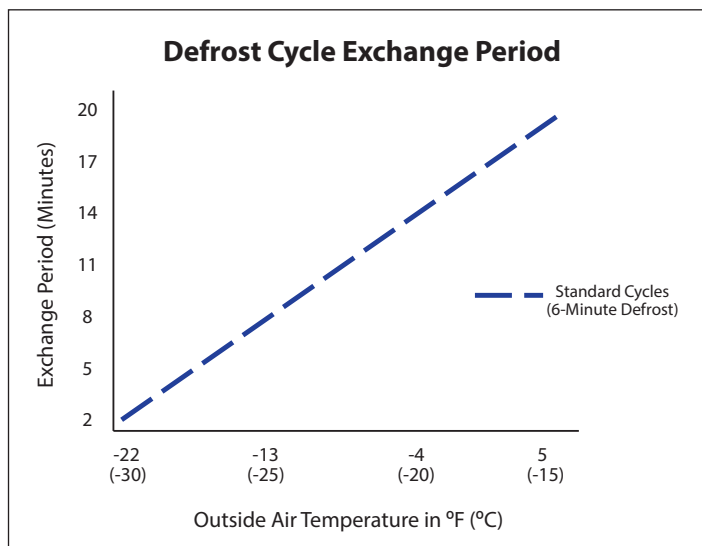
Internal Pre-Heat by Hot Water Coil:

- 0-10 V signal on the control panel
- Front or back piping connections

Wheel Speed Variation (VFD)

Defrost Cycles:

- Exhaust Only or Recirculation
- Comes with motorized and insulated damper on OA only
- See table below for temperature references



AVAILABLE OPTIONS

Cabinet Options:

- Supply and Exhaust Hoods with bird screens
- Roof Curb: 14" (356 mm) high, 18-gauge galvanized steel, insulation optional
- Front or back piping connections (drain pan and water coil and/or cooling connections)
- Pool Construction: TEFC motors, stainless steel interior, and epoxy-coated fans (NOTE: ERV not recommended for indoor pool applications)

AVAILABLE OPTIONS

Components Options:

- Final MERV 13 filters added to the fresh air circuit
- Motorized and insulated dampers (on OA and/or EA openings)
- Non-insulated backdraft damper (on EA opening only)
- Post-Heat by Electric Coil: Powered by unit
- Post-Heat by Hot Water Coil: 0-10VDC signal to maintain supply air temperature, or 0-10VDC signal by others
- Cold Water Cooling Coil: Control by others, comes with 18-gauge stainless steel drain pan
- DX Cooling Coil: All controls and condensation unit by others, comes with 18-gauge stainless steel drain pan
- Mechanical Purge

Blower Motor Options:

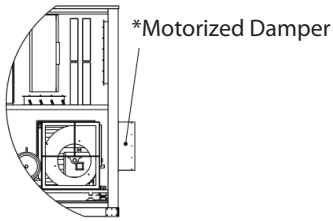
- TEFC, Premium (only available with ≥1.5 hp/ 3ph)
- 2-Speed motors (only available with ODP, EPAct motors)
- Programmable 2-Speed (VFD)
- Variable Frequency Drive (VFD), 0-10VDC control signal by others
- Backward-inclined blowers

Control Options:

- Economizer Cycle: Free cooling management by temperature sensor on OA
- Dirty Filters Contact: Will close a dry contact when dirty filters are detected
- Low Airflow Switch: Will open a dry contact when no airflow is detected on supply blower
- Low Temperature Limit: Unit will stop if fresh air supply is under set point (adjustable) for more than 5 minutes
- Phase Loss Detection: Unit will stop when a phase loss occurs, automatic restart (3-phase power only)
- Wheel Rotation Detection: A dry contact will close if no rotation is detected
- Damper End Switch: Unit start up conditional to dampers opening
- Recirculation Dry Contact: For unoccupied mode, must select recirculation defrost option
- Terminals for OA and/or EA damper power and control (24VAC, 10VA): Included when OA/EA damper selected
- Programmable Timer
- CO₂ or Relative Humidity (RH) Sensor: Sequence of operations must be verified by factory
- BacNet Compatible Controller
 - Available Upgrades:
 - » IP Communication Network Module
 - » MS/TP Communication Network Module
 - » Remote Keypad
 - » Remote Keypad with Touchscreen

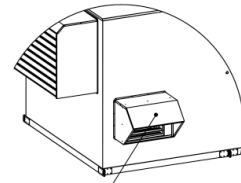
Components

Exhaust Damper Option for Interior Unit

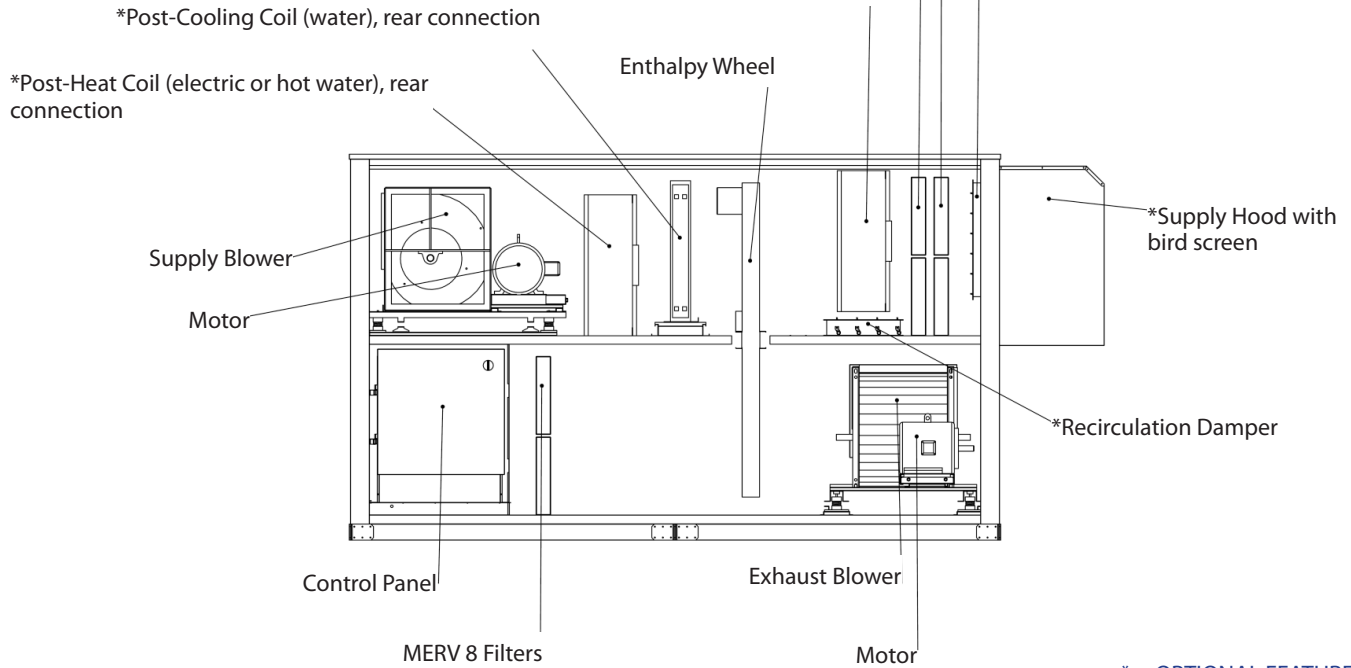


*Motorized Damper

Exhaust Hood Option for Exterior Unit

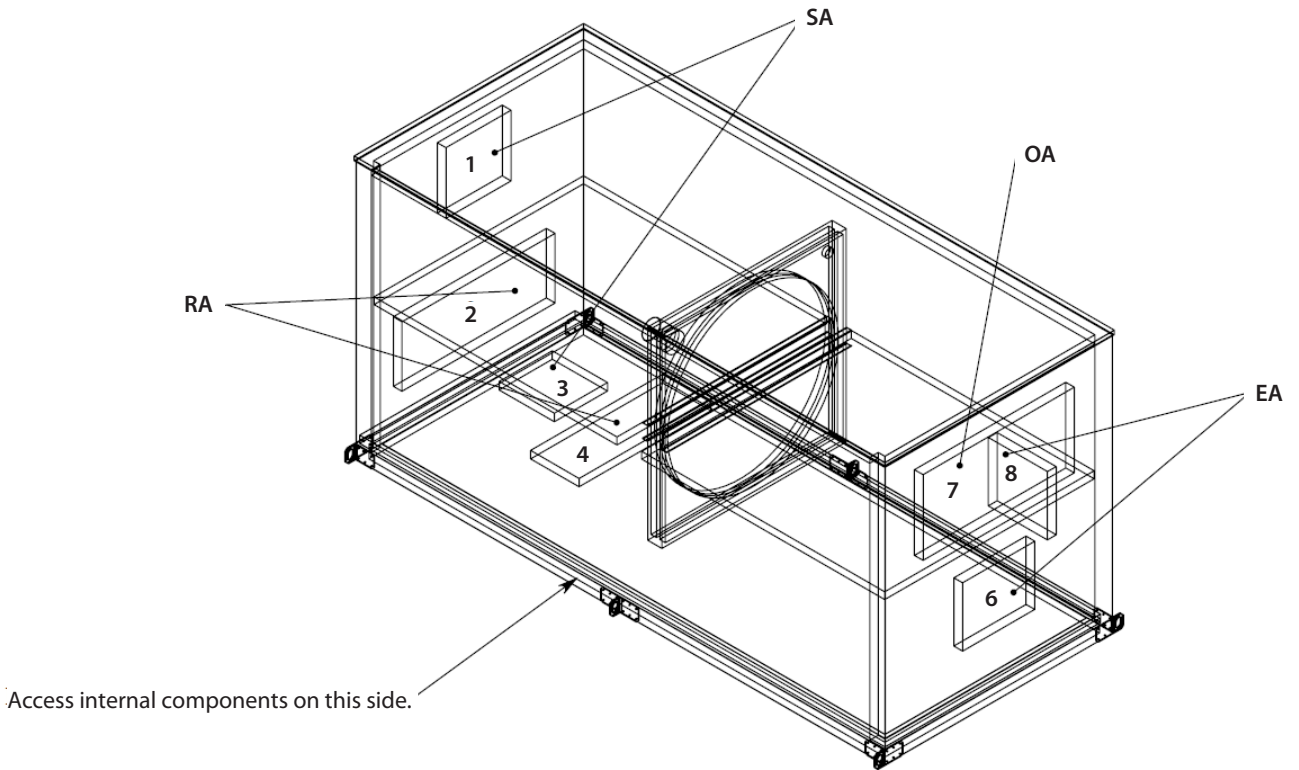


*Exhaust Hood



* = OPTIONAL FEATURE

Configurations



AVAILABLE CONFIGURATIONS
3-4-7-8
3-4-6-7 *
1-2-7-8
1-2-6-7 *
1-4-7-8
1-4-6-7 *
2-3-7-8
2-3-6-7 *

LEGEND	
RA	Return Air
SA	Supply Air
OA	Outside Air
EA	Exhaust Air

Mirror Image Cabinet Also Available

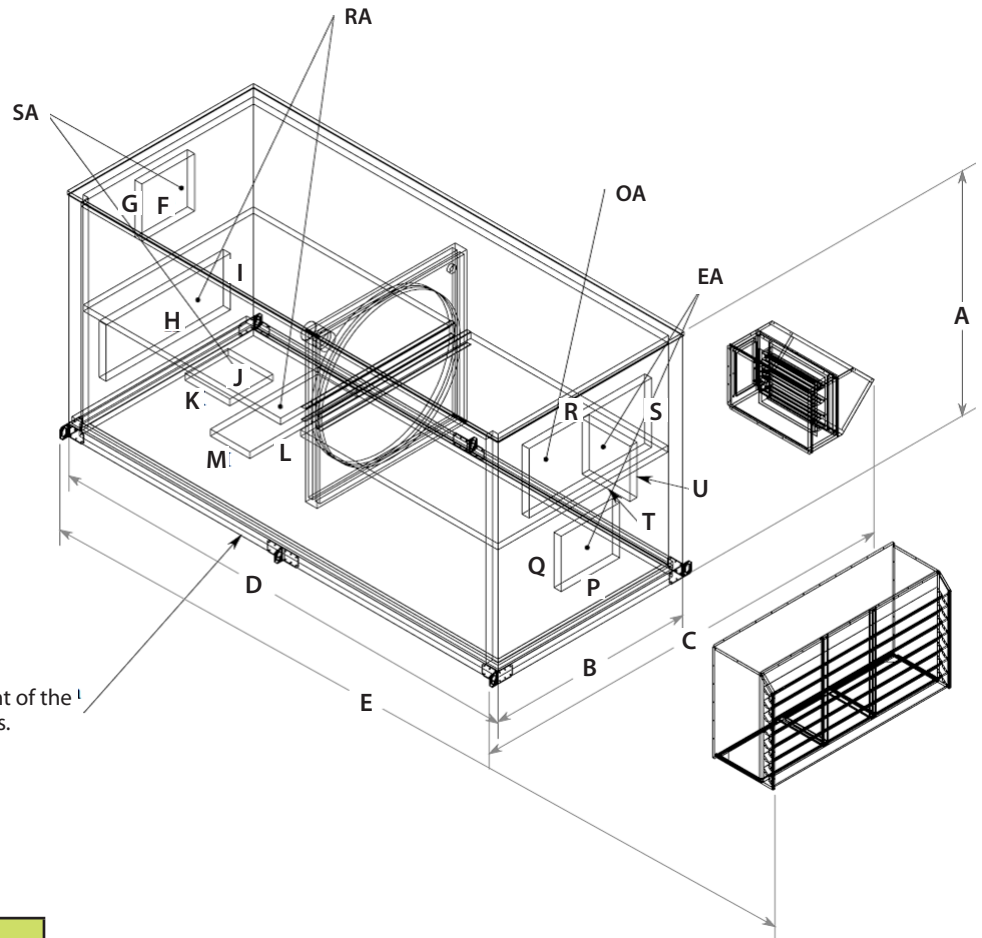
* = Configuration not available with hoods option

Dimensions & Weights

CABINET*																		
Unit	Height		Width				Length											V
	A	B	Overall		Overall - Standard				Overall - 1 Coil Option				Overall - 2 Coils Option					
			C	D	D	E			D	E			D	E				
Overall	Base - Standard	Standard	Hoods Option	Base - Standard	Standard	Motorized Exhaust Damper Option	Hoods Option	Base - Standard	Standard	Motorized Exhaust Damper Option	Hoods Option	Base - Standard	Standard	Motorized Exhaust Damper Option	Hoods Option	Front Clearance Required		
CW5000	79.9 (2029)	69.5 (1765)	75.4 (1915)	96.3 (2446)	121.7 (3091)	121.5 (3086)	131.8 (3348)	146.3 (3716)	141.3 (3589)	147.3 (3741)	151.8 (3856)	166.3 (4224)	161.3 (4097)	167.3 (4249)	171.8 (4364)	186.3 (4732)	64 (1626)	

OPENINGS*															
Unit	F	G	H	I	J	K	L	M	P	Q	R	S	T	U	
CW5000	22 (559)	18 (457)	40 (1016)	18 (457)	22 (559)	18 (457)	40 (1016)	18 (457)	22 (559)	18 (457)	40 (1016)	18 (457)	22 (559)	18 (457)	

* All dimensions in inches (mm)



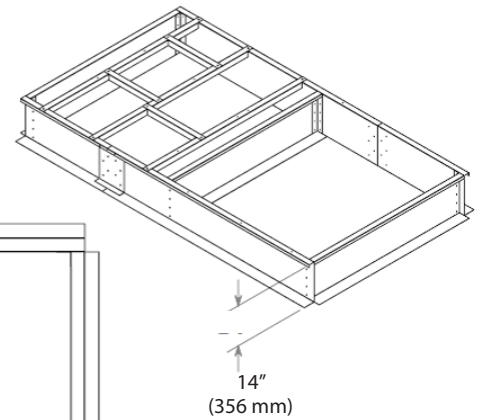
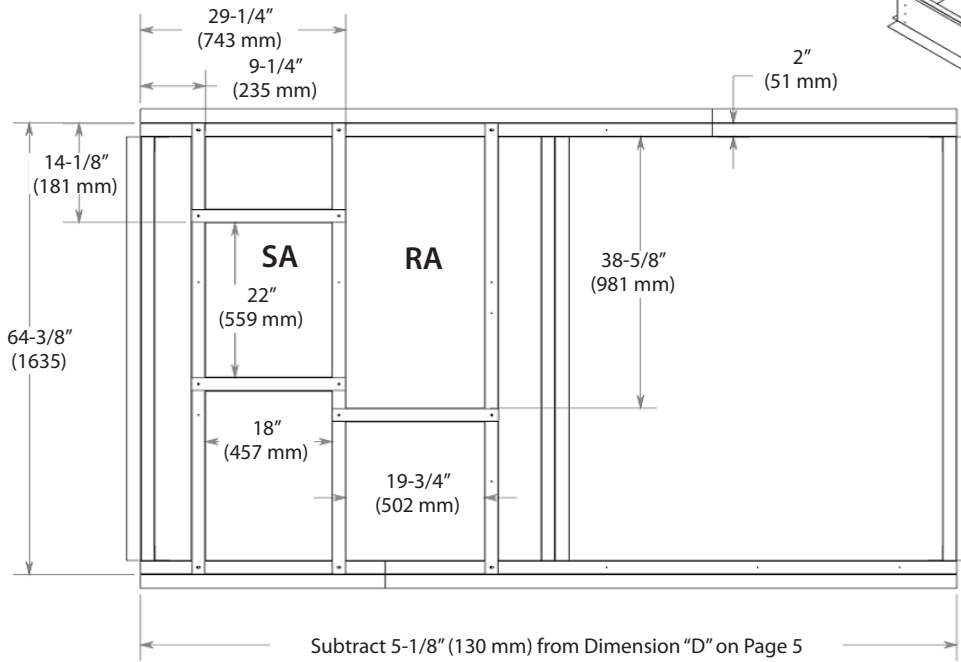
Dimension "V": Clearance required in front of the unit for access to the internal components.

WEIGHT - CW5000†	
Minimum	3022 lbs (1371 kg)
Maximum	4259 lbs (1932 kg)

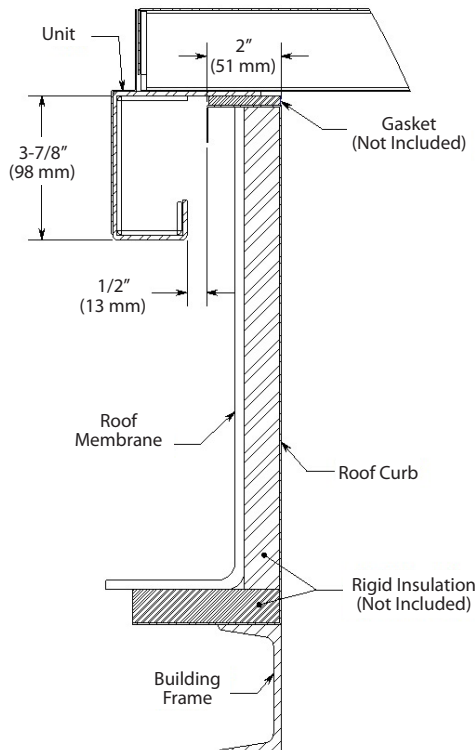
† Actual weight may vary by ±10%. Shipping weight calculated after final selection. Roof curbs shipped separately.

Roof Curb Dimensions

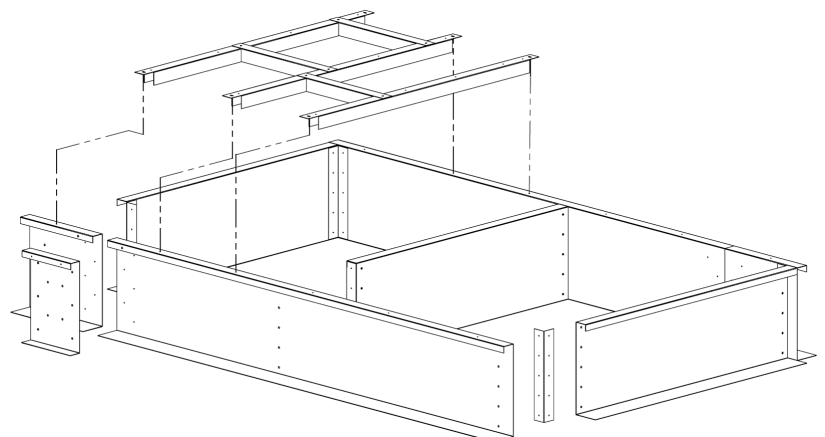
NOTE: Drawings not to scale



Roof Curb Assembly



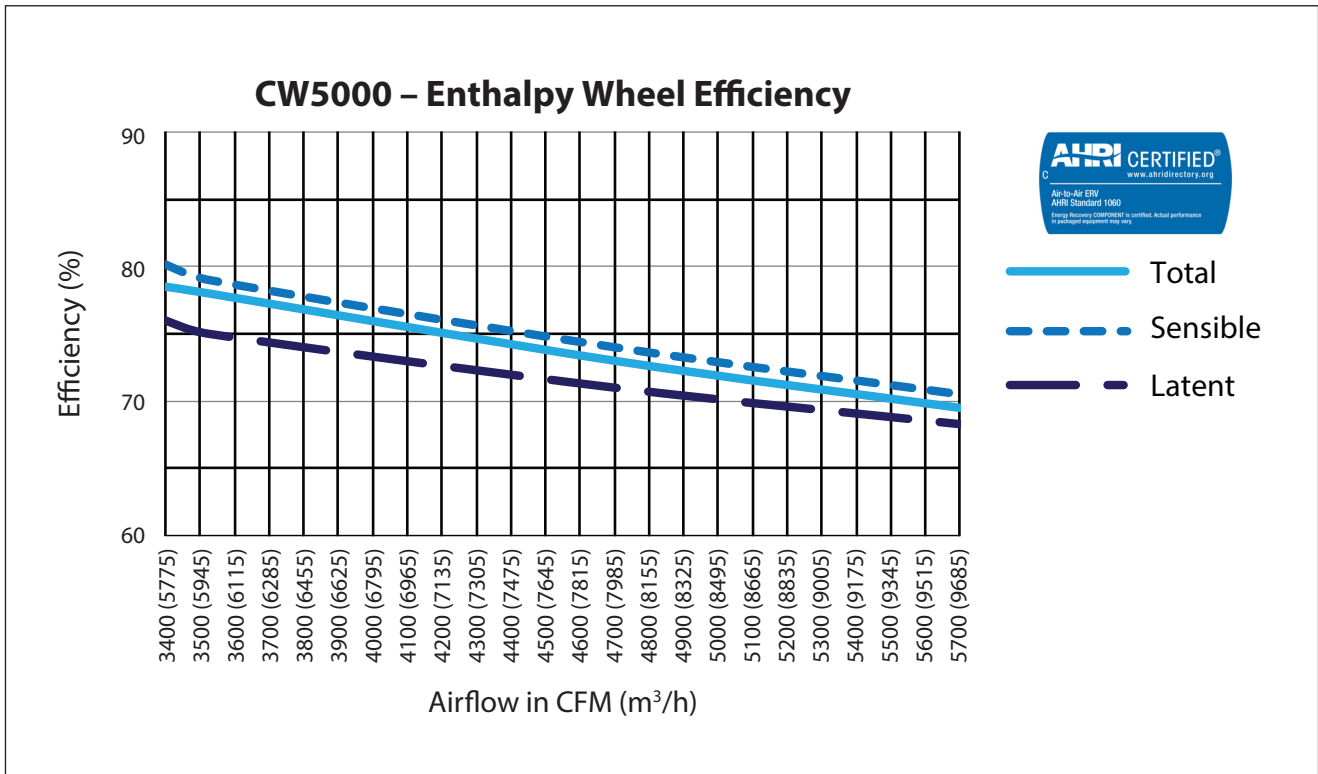
ROOF CURB WEIGHTS & DIMENSIONS	
Roof Curb Weight	150 lbs (68 kg)
Shipping Weight	195 lbs (88 kg)
Shipping Dimensions (W x H x D)	96" x 24" x 25" (2438 mm x 610 mm x 635 mm)



Enthalpy Wheel Performance

AHRI STANDARD CONDITIONS	CONDITIONS	
Outside Temperature	Winter	Summer
Dry Bulb	35°F (1.7°C)	95°F (35°C)
Wet Bulb	33°F (0.6°C)	78°F (25.6°C)
Exhaust Air Temperature	Winter	Summer
Dry Bulb	70°F (21.1°C)	75°F (23.9°C)
Wet Bulb	58°F (14.4°C)	63°F (17.2°C)

Note: Efficiencies are based on AHRI standard winter conditions.



Motor Selection – Enthalpy Wheel

SUPPLY/EXHAUST																				
MOTOR	AIRFLOW	EXTERNAL STATIC PRESSURE (IN H ₂ O) - SUPPLY/EXHAUST																		MOTOR
		0.25 (60 Pa)			0.50 (125 Pa)			0.75 (185 Pa)			1.00 (250 Pa)			1.25 (310 Pa)			1.50 (375 Pa)			
		CFM (m ³ /h)	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	
2 hp	3400 (5775)	774	1.34	1.60	838	1.51	1.81	899	1.71	2.05	960	1.92	2.31	1016	2.15	2.58	1070	2.37	2.85	3 hp
	3500 (5945)	782	1.41	1.70	845	1.59	1.91	905	1.79	2.15	965	2.00	2.40	1020	2.23	2.67	1073	2.45	2.94	
	3600 (6115)	790	1.50	1.80	852	1.68	2.01	911	1.88	2.25	969	2.09	2.51	1024	2.31	2.78	1077	2.54	3.05	
	3700 (6285)	799	1.58	1.90	859	1.76	2.12	918	1.97	2.36	975	2.18	2.61	1028	2.40	2.88	1081	2.63	3.16	
3 hp	3800 (6455)	808	1.67	2.01	866	1.86	2.23	924	2.06	2.47	980	2.27	2.73	1033	2.50	3.00	1085	2.73	3.27	5 hp
	3900 (6625)	816	1.77	2.12	874	1.96	2.35	931	2.16	2.59	985	2.37	2.85	1038	2.60	3.12	1090	2.83	3.40	
	4000 (6795)	825	1.87	2.24	881	2.06	2.47	937	2.26	2.72	991	2.48	2.97	1043	2.70	3.24	1094	2.94	3.52	
	4100 (6965)	834	1.97	2.37	889	2.16	2.60	944	2.37	2.85	997	2.59	3.10	1048	2.81	3.38	1098	3.05	3.66	
	4200 (7135)	843	2.08	2.50	897	2.27	2.73	951	2.48	2.98	1003	2.70	3.24	1053	2.93	3.51	1103	3.16	3.80	
	4300 (7305)	852	2.19	2.63	905	2.39	2.87	958	2.60	3.12	1009	2.82	3.38	1058	3.05	3.66	1108	3.28	3.94	
	4400 (7475)	862	2.31	2.77	913	2.51	3.01	965	2.72	3.27	1015	2.94	3.53	1064	3.17	3.81	1113	3.41	4.09	
	4500 (7645)	871	2.43	2.91	921	2.63	3.16	972	2.85	3.42	1021	3.07	3.68	1070	3.30	3.96	1118	3.54	4.25	
5 hp	4600 (7815)	881	2.55	3.06	930	2.76	3.31	980	2.98	3.58	1028	3.20	3.84	1075	3.44	4.12	1123	3.68	4.41	7.5 hp
	4700 (7985)	891	2.68	3.22	938	2.89	3.47	987	3.11	3.74	1034	3.34	4.01	1081	3.58	4.29	1128	3.82	4.58	
	4800 (8155)	901	2.81	3.38	947	3.03	3.63	995	3.25	3.91	1041	3.48	4.18	1087	3.72	4.47	1134	3.97	4.76	
	4900 (8325)	911	2.95	3.54	956	3.17	3.80	1003	3.40	4.08	1048	3.63	4.36	1094	3.87	4.64	1139	4.12	4.94	
	5000 (8495)	921	3.09	3.71	965	3.31	3.98	1011	3.55	4.26	1055	3.78	4.54	1100	4.03	4.83	1145	4.27	5.13	
	5100 (8665)	931	3.24	3.88	974	3.46	4.15	1019	3.70	4.44	1062	3.94	4.73	1107	4.18	5.02	1151	4.43	5.32	
	5200 (8835)	941	3.39	4.06	983	3.62	4.34	1027	3.86	4.63	1070	4.10	4.92	1114	4.35	5.22	1157	4.60	5.52	
	5300 (9005)	952	3.54	4.25	993	3.77	4.53	1035	4.02	4.82	1077	4.27	5.12	1120	4.52	5.42	1163	4.77	5.72	
	5400 (9175)	963	3.70	4.44	1002	3.94	4.72	1044	4.19	5.02	1085	4.44	5.33	1127	4.69	5.63	1169	4.94	5.93	
	5500 (9345)	973	3.86	4.63	1012	4.10	4.92	1052	4.36	5.23	1093	4.61	5.54	1136	4.87	5.85	1175	5.13	6.15	
5600 (9515)	984	4.03	4.83	1022	4.27	5.13	1061	4.53	5.44	1100	4.79	5.75	1142	5.05	6.07	1182	5.31	6.37		
7.5 hp	5700 (9685)	995	4.20	5.03	1032	4.45	5.34	1070	4.71	5.65	1109	4.98	5.97	1150	5.24	6.29	1189	5.50	6.60	

NOTE:

hp = bhp x 1.2

Additional Air Pressure Drop with MERV 13 Filters

Airflow CFM (m ³ /h)	APD in. H ₂ O (Pa)
3400 (5775)	0.09 (22)
3500 (5945)	0.09 (23)
3600 (6115)	0.10 (24)
3700 (6285)	0.10 (26)
3800 (6455)	0.11 (27)
3900 (6625)	0.11 (28)
4000 (6795)	0.12 (30)
4100 (6965)	0.12 (31)
4200 (7135)	0.13 (32)
4300 (7305)	0.14 (34)
4400 (7475)	0.14 (35)
4500 (7645)	0.15 (36)

Airflow CFM (m ³ /h)	APD in. H ₂ O (Pa)
4600 (7815)	0.15 (38)
4700 (7985)	0.16 (39)
4800 (8155)	0.16 (40)
4900 (8325)	0.17 (42)
5000 (8495)	0.17 (43)
5100 (8665)	0.18 (45)
5200 (8835)	0.18 (46)
5300 (9005)	0.19 (47)
5400 (9175)	0.19 (49)
5500 (9345)	0.20 (50)
5600 (9515)	0.21 (51)
5700 (9685)	0.21 (53)

aldes ▲ = Standard Feature □ = Optional Feature (check the box to select this option) Send finished selection to American ALDES.

MODEL

Series: Advanced Commercial (CW) Nominal Capacity: 3400-5700 CFM Application: Interior (i) Exterior (e)

CASING

Cabinet Finish

- Painted
- Pool Construction

Supply & Exhaust Hoods

- Optional (exterior models)

Duct Configuration (see pg. 4)

- 1-2-6-7¹ 1-4-7-8
- 3-4-6-7¹ 1-4-6-7¹
- 1-2-7-8 2-3-7-8
- 3-4-7-8 2-3-6-7¹

Mirror Image Cabinet

- Optional

Roof Curb (exterior models)

- None
- Insulated
- Non-Insulated

ELECTRICAL REQUIREMENTS

- 120V/1ph/60Hz
- 208V/1ph/60Hz
- 230V/1ph/60Hz
- 208V/3ph/60Hz
- 230V/3ph/60Hz
- 460V/3ph/60Hz
- 575V/3ph/60Hz

FROST CONTROL

- None
- Exhaust Defrost²
- Recirculation²
- Pre-Heat (Electric Coil)
- Pre-Heat (Hot Water Coil)
- Wheel Speed Variation (VFD)

BLOWERS & MOTORS

Supply Blower

- 1.5 hp 5 hp
- 2 hp 7.5 hp
- 3 hp

Exhaust Blower

- 1.5 hp 5 hp
- 2 hp 7.5 hp
- 3 hp

Motor Type

- ODP, EPA³
- ODP, Premium⁴
- TEFC, EPA³
- TEFC, Premium⁵

Blower Type

- Forward Curved
- Backward Inclined

Blower Control

- Single Speed
- 2-Speed⁶
- Programmable 2-Speed (VFD)
- VFD

HEATING OPTIONS

- None
- Post-Heat (Electric Coil)
- Post-Heat (Hot Water Coil)

COOLING OPTIONS

- None
- Cold Water Cooling Coil
- DX Cooling Coil

FILTERS

- MERV 8
- MERV 13 (Final Filter)

ADD-ONS

- Mechanical Purge
- Motorized & Insulated Damper for EA
- Non-Insulated Backdraft Damper for EA
- Motorized & Insulated Damper for OA²
- Terminals for OA and/or EA damper power and control (24VAC, 10VA)
- Low Temperature Limit
- Economizer Cycle
- Dirty Filters Contact
- Low Airflow Switch
- Phase Loss Detection
- Wheel Rotation Detection
- Damper End Switch
- Recirculation Dry Contact⁷
- Programmable Timer
- CO₂ Sensor⁸
- Relative Humidity Sensor⁸
- BacNet Compatible Controller
 - With IP Module
 - With MS/TP Module
 - With Remote Keypad
 - With Remote Keypad (Touchscreen)
- Spare MERV 8 Filters QTY: _____
- Spare Belts QTY: _____

¹ Configuration not available with hoods option
² OA Motorized & Insulated Damper included with exhaust defrost and recirculation
³ EPA³ efficiency only available when Premium efficiency is not available (e.g., with single-phase motors)
⁴ ODP, Premium only available with ≥ 3 hp/ 3ph motors
⁵ TEFC, Premium only available with ≥ 1.5 hp/ 3ph motors
⁶ 2-Speed only available with ODP, EPA³ motors
⁷ Recirculation Dry Contact requires selection of recirculation defrost
⁸ Sequence of operations must be verified by factory

Project:		Architect:	
Location:		Engineer:	
Model #:		Contractor:	
Quantity:		Comments:	
Submitted By:			
Date:			

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