



AEROMATIC™ SERIES 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, EPAct 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

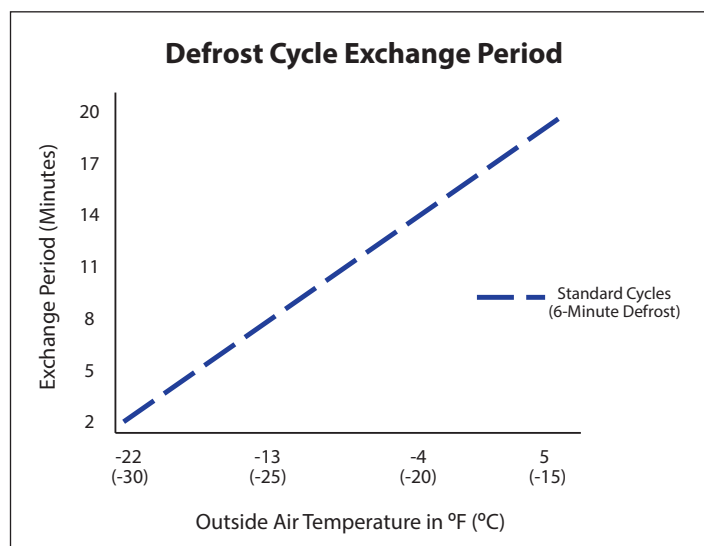
Internal Pre-Heat by Hot Water Coil:

- 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  $\geq 1.5$  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:

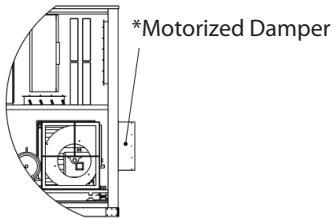
- Economizer Cycle: Free cooling management by temperature sensor on OA
- Dirty Filters Contact: Will close a dry contact when dirty filters are detected
- Low Airflow Switch: Will open a dry contact when no airflow is detected on supply blower
- Low Temperature Limit: Unit will stop if fresh air supply 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
- CO<sub>2</sub> 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

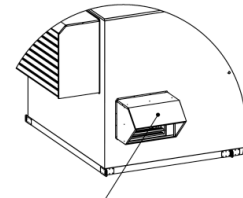


\*Motorized Damper

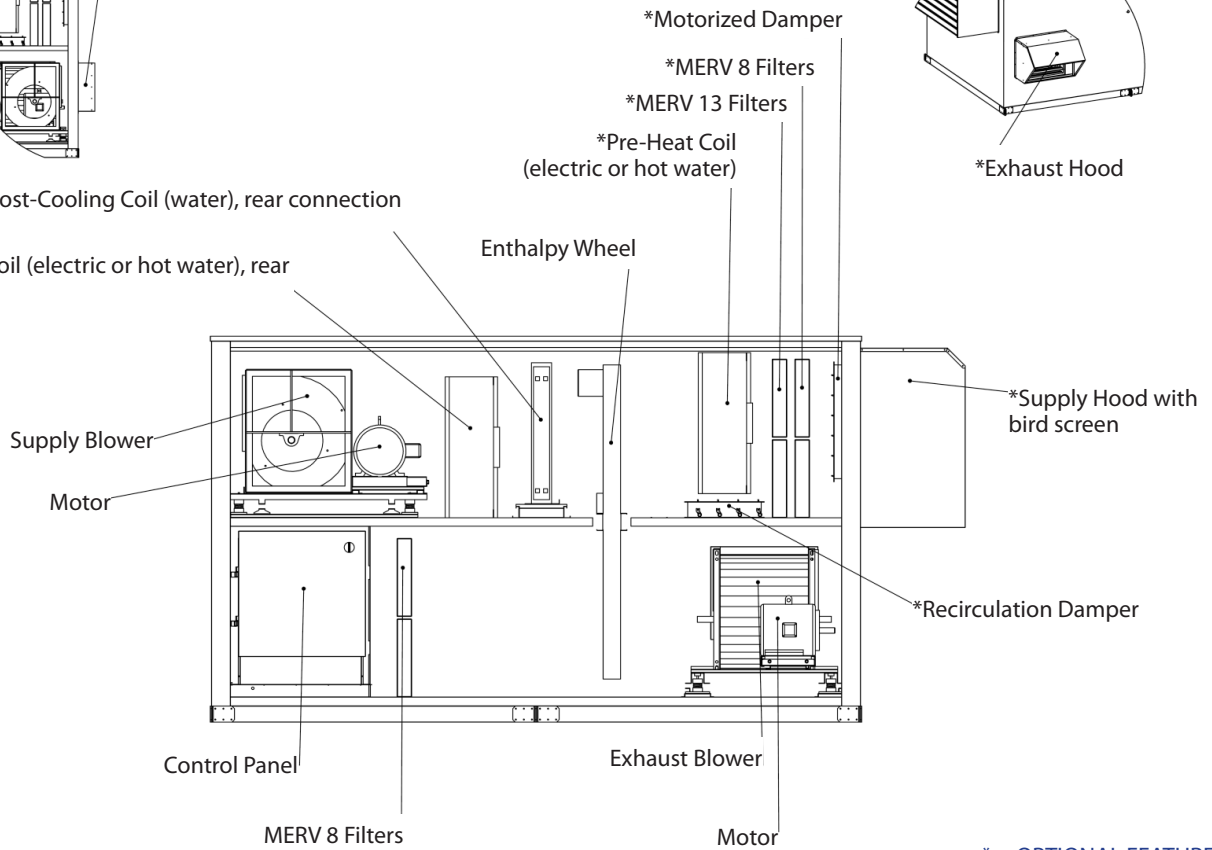
\*Post-Cooling Coil (water), rear connection

\*Post-Heat Coil (electric or hot water), rear connection

Exhaust Hood Option for Exterior Unit

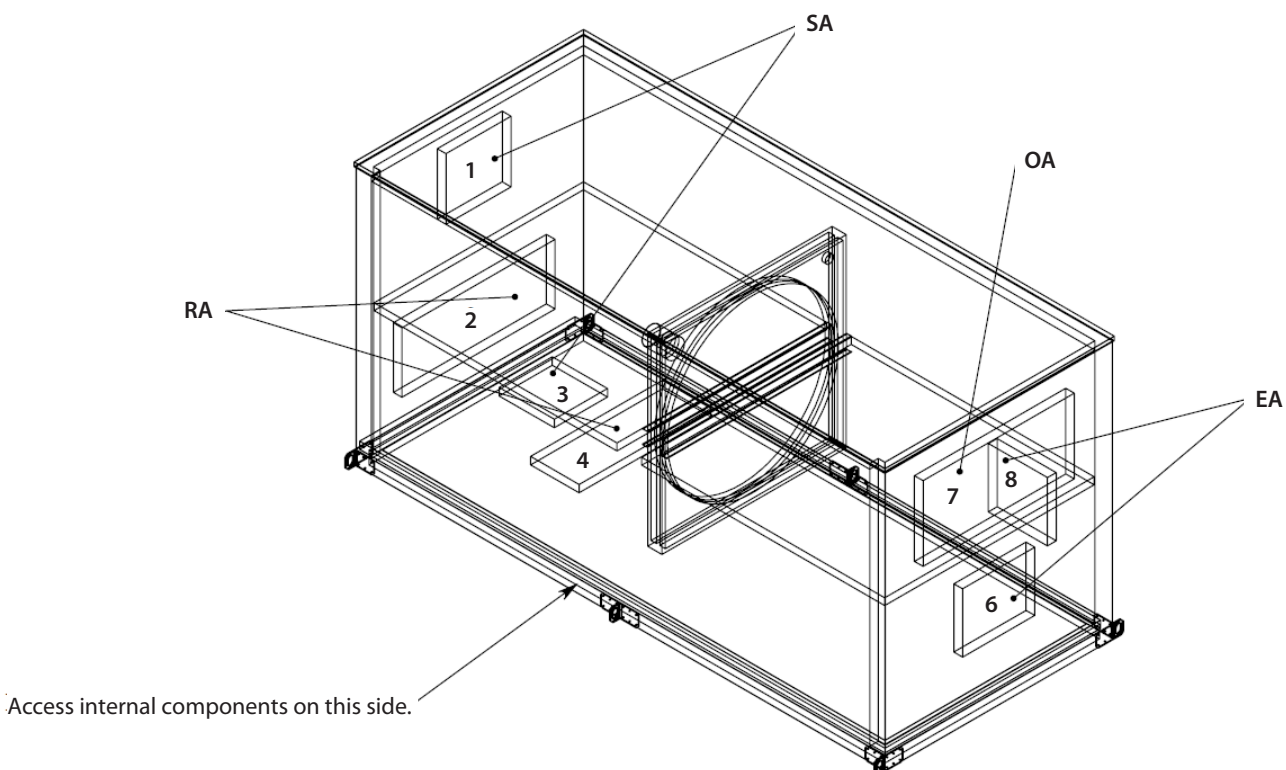


\*Exhaust Hood



\* = 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

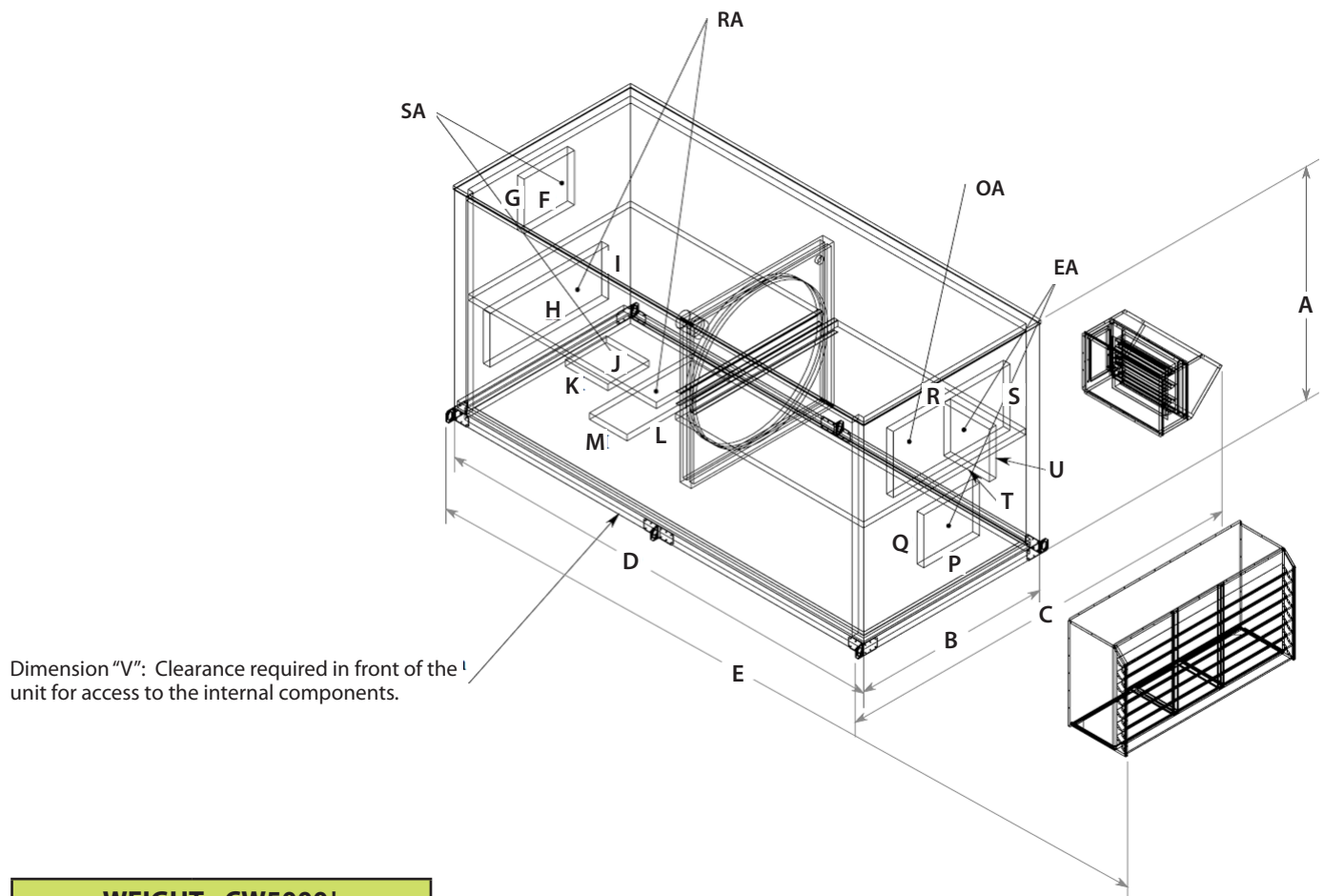
\* = Configuration not available with hoods option

# Dimensions & Weights

| CABINET* |             |                 |             |              |                    |              |                                 |              |                         |              |                                 |              |                          |              |                                 |              |                          |
|----------|-------------|-----------------|-------------|--------------|--------------------|--------------|---------------------------------|--------------|-------------------------|--------------|---------------------------------|--------------|--------------------------|--------------|---------------------------------|--------------|--------------------------|
| Unit     | Height      | Width           |             |              |                    | Length       |                                 |              |                         |              |                                 |              |                          |              |                                 |              |                          |
|          | A           | B               | Overall     |              | Overall - Standard |              |                                 |              | Overall - 1 Coil Option |              |                                 |              | Overall - 2 Coils Option |              |                                 |              | V                        |
|          |             |                 | C           |              | 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)

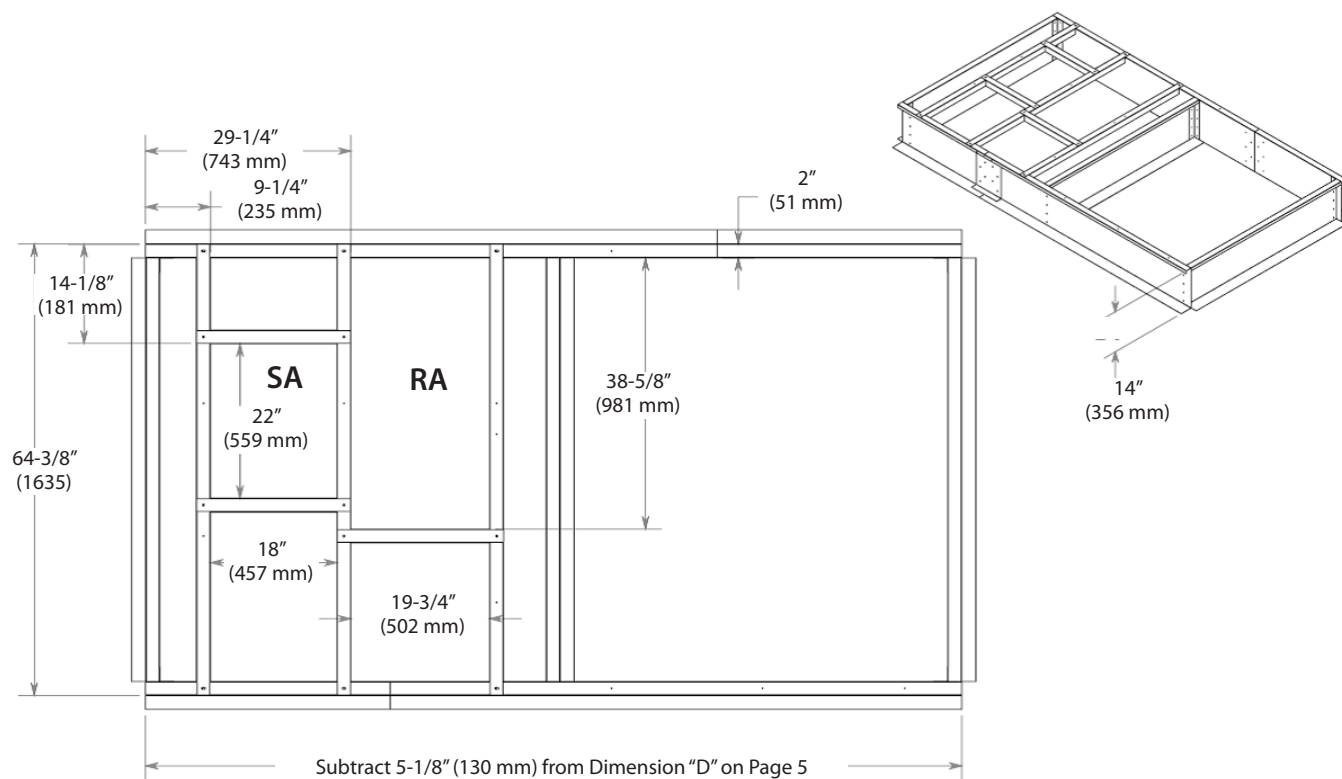


| WEIGHT - CW5000† |                    |
|------------------|--------------------|
| Minimum          | 3022 lbs (1371 kg) |
| Maximum          | 4259 lbs (1932 kg) |

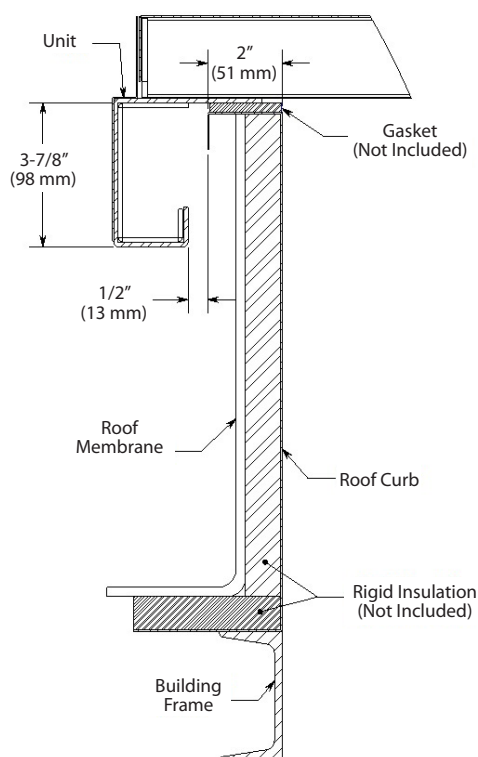
† Actual weight may vary by ±10%. Shipping weight calculated after final selection. Roof curbs shipped separately.

## Roof Curb Dimensions

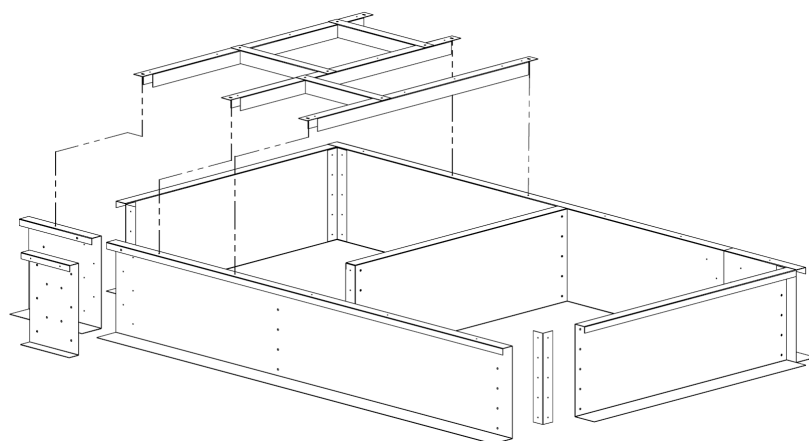
**NOTE: Drawings not to scale**



# Roof Curb Assembly



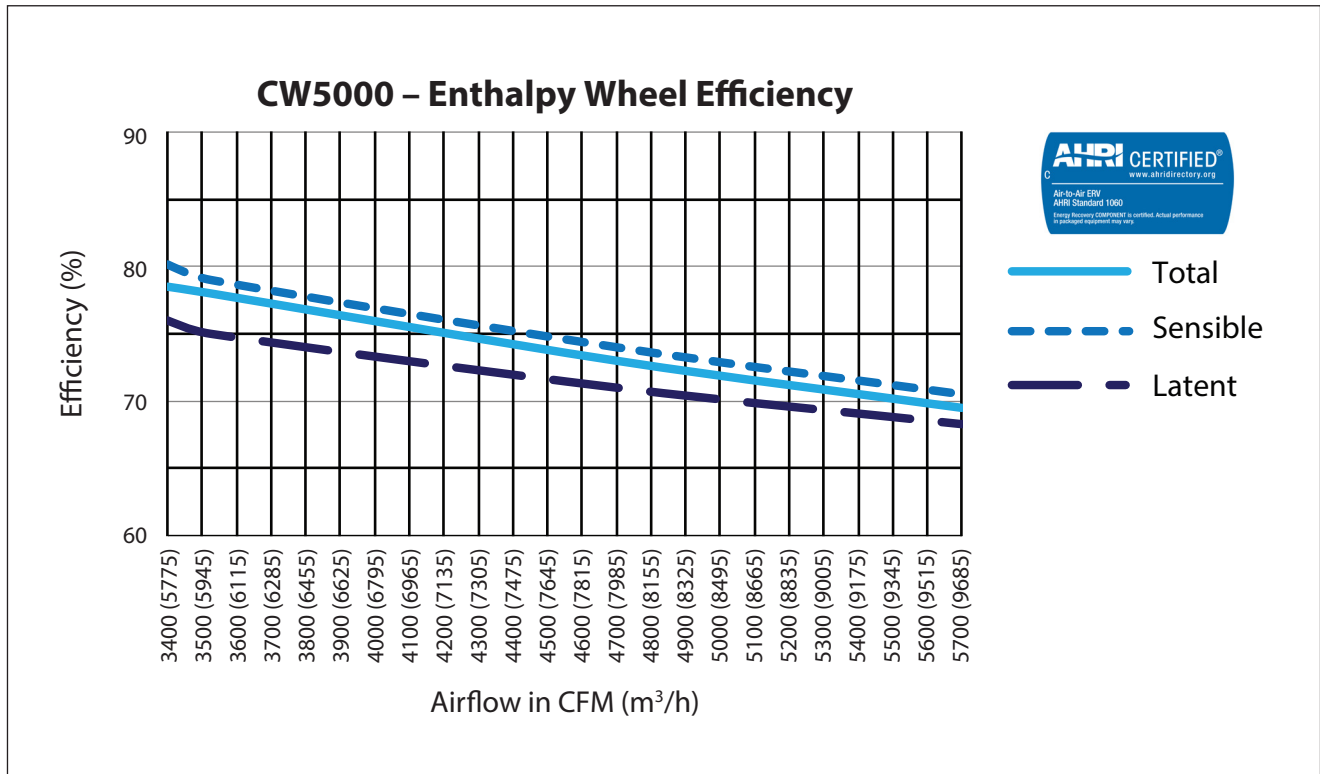
| ROOF CURB WEIGHTS & DIMENSIONS     |                                                |
|------------------------------------|------------------------------------------------|
| Roof Curb Weight                   | 150 lbs (68 kg)                                |
| Shipping Weight                    | 195 lbs (88 kg)                                |
| Shipping Dimensions<br>(W x H x D) | 96" x 24" x 25"<br>(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 <sub>2</sub> 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 (m³/h)  | RPM                                                             | BHP  | HP   | RPM           | BHP  | HP   | RPM           | BHP  | HP   | RPM           | BHP  | HP   | RPM           | BHP  | HP   | RPM           | BHP  | PH    |        |
| 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  |        |

NOTE:

hp = bhp x 1.2

## Additional Air Pressure Drop with MERV 13 Filters

| Airflow CFM (m <sup>3</sup> /h) | APD in. H <sub>2</sub> O (Pa) | Airflow CFM (m <sup>3</sup> /h) | APD in. H <sub>2</sub> O (Pa) |
|---------------------------------|-------------------------------|---------------------------------|-------------------------------|
| 3400 (5775)                     | 0.09 (22)                     | 4600 (7815)                     | 0.15 (38)                     |
| 3500 (5945)                     | 0.09 (23)                     | 4700 (7985)                     | 0.16 (39)                     |
| 3600 (6115)                     | 0.10 (24)                     | 4800 (8155)                     | 0.16 (40)                     |
| 3700 (6285)                     | 0.10 (26)                     | 4900 (8325)                     | 0.17 (42)                     |
| 3800 (6455)                     | 0.11 (27)                     | 5000 (8495)                     | 0.17 (43)                     |
| 3900 (6625)                     | 0.11 (28)                     | 5100 (8665)                     | 0.18 (45)                     |
| 4000 (6795)                     | 0.12 (30)                     | 5200 (8835)                     | 0.18 (46)                     |
| 4100 (6965)                     | 0.12 (31)                     | 5300 (9005)                     | 0.19 (47)                     |
| 4200 (7135)                     | 0.13 (32)                     | 5400 (9175)                     | 0.19 (49)                     |
| 4300 (7305)                     | 0.14 (34)                     | 5500 (9345)                     | 0.20 (50)                     |
| 4400 (7475)                     | 0.14 (35)                     | 5600 (9515)                     | 0.21 (51)                     |
| 4500 (7645)                     | 0.15 (36)                     | 5700 (9685)                     | 0.21 (53)                     |



# Selection Information

9

▲ = Standard Feature    □ = Optional Feature (check the box to select this option)    Send finished selection to Aldes Canada.

## 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)

- ▲ 1-2-6-7<sup>1</sup>    □ 1-4-7-8  
□ 3-4-6-7<sup>1</sup>    □ 1-4-6-7<sup>1</sup>  
□ 1-2-7-8    □ 2-3-7-8  
□ 3-4-7-8    □ 2-3-6-7<sup>1</sup>

### 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 Defrost<sup>2</sup>  
□ Recirculation<sup>2</sup>  
□ 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, EPAct<sup>3</sup>  
□ ODP, Premium<sup>4</sup>  
□ TEFC, EPAct<sup>3</sup>  
□ TEFC, Premium<sup>5</sup>

### Blower Type

- ▲ Forward Curved  
□ Backward Inclined

### Blower Control

- ▲ Single Speed  
□ 2-Speed<sup>6</sup>  
□ 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 OA<sup>2</sup>  
□ 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 Contact<sup>7</sup>  
□ Programmable Timer  
□ CO<sub>2</sub> Sensor<sup>8</sup>  
□ Relative Humidity Sensor<sup>8</sup>  
□ 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: \_\_\_\_\_

<sup>1</sup> Configuration not available with hoods option

<sup>2</sup> OA Motorized & Insulated Damper included with exhaust defrost and recirculation

<sup>3</sup> EPAct efficiency only available when Premium efficiency is not available (e.g., with single-phase motors)

<sup>4</sup> ODP, Premium only available with ≥ 3 hp/ 3ph motors

<sup>5</sup> TEFC, Premium only available with ≥ 1.5 hp/ 3ph motors

<sup>6</sup> 2-Speed only available with ODP, EPAct motors

<sup>7</sup> Recirculation Dry Contact requires selection of recirculation defrost

<sup>8</sup> Sequence of operations must be verified by factory

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

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