# Vertical Stack ERV

## General Data Brochure

## Generation 3

# ERV Electrical Data

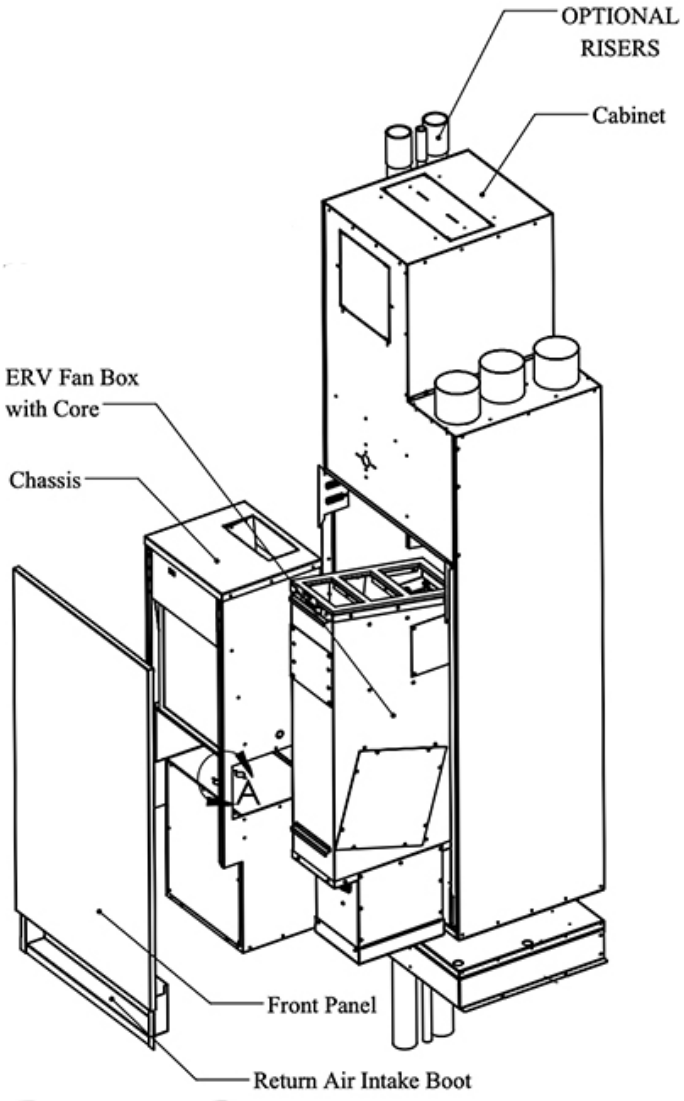
## Per Fan

Name Plate Watts: 73W
Operating Watts @ 50 cfm: 35W
Operating Watts @ 100 cfm: 50W

## With 2 Fans per ERV

Name Plate Watts: 146 W
Operating Watts @ 50 cfm: 70W
Operating Watts @ 100 cfm: 100W

FLA for each ERV Fan = 0.77 A
Unit FLA = 1.54 A
Each ERV operates at 0.6 amps



# ERV Guide Specification

## 1.0 System Description

1.1 The Energy Recovery Ventilators shall be an integrated part of the Vertical Stack Cabinet and is based on the Bulldog Heat Pump System. The integrated ERV will consist of a fan box with an exhaust and fresh air fan and ERV core.

1.2 The entire ERV unit shall be completely removable and accessible from the cabinets front panel.

1.3 The system will automatically provide fresh air to the space when the Vertical Stack chassis main supply fan operates. The integrated ERV utilizes an exhaust and fresh air fan as well as a passive energy recovery core. The ERV fans will operate whenever there is a call for heating or cooling from the thermostat, when the thermostat fan selector switch is in the "ON" position or when a remote, field supplied and installed by others, dry contact switch is closed (remote switch is optional).

1.4 Airflow System:

- The exhaust air enters the top of the integrated ERV whenever the exhaust air fan is operational. If the Vertical Stack chassis main supply fan is off, air from the washroom exhaust fan (by others) bypasses the ERV core and is expelled outside. If the Vertical Stack main supply fan is on then the exhaust bypass damper closes forcing exhaust air to pass through the integrated ERV core, which is then expelled outside. The ERV fresh air fan draws outside air into the integrated ERV core, the heat and moisture (from the exhaust air) is passed through to the fresh air.
- The fresh air is released inside the Vertical Stack unit cabinet where the main supply fan draws it into the chassis and distributes it to the space.
- In the unlikely event of frost build up on the ERV core, a fresh air discharge air temperature sensor will momentarily stop the fresh air fan unit the air returns to the normal limit.

1.5 Model selection and performance shall be in accordance with the schedule on the drawings. The InnKeeper (008-018) Integrated ERV is designed to exhaust 50 CFM (23 L/s) of air at an ESP of 0.25" (62 Pa) W.C.

1.6 The HomeKeeper (016-048) Integrated ERV is designed to exhaust 100 CFM (47 L/s) of air at an ESP of 0.25" (62 Pa) W.C.

1.7 Each ERV shall be run tested to verify proper operation.

1.8 The Integrated ERV/Chassis assembly shall be safety certified and bear a seal of approval from one of UL/ULC/ETL or ESA.

1.9 Manufacturer shall warrant the parts only of each unit for a period of 12 months from the start-up date or 18 months from the unit shipment date whichever occurs first.

1.10 The system shall never be used during the construction phase as fine dust can permeate the ERV core resulting in loss of performance, or failure.

1.11 Alternate proposals shall include consideration for equipment space requirements accessibility, pipe and equipment sizing electrical installation impact, operation costs, sound implications and redesign fees.

## 2.0 Cabinet

2.1 The Integrated ERV Cabinet shall be constructed from heavy gauge galvanized steel and has internal channels to direct air from the exhaust and fresh air through the ERV core.

2.2 The cabinet incorporates a bypass damper to allow exhaust air to exit the building if the ERV exhaust fan is off.

# ERV Guide Specification

## 3.0 ERV Fan Box

3.1 The Integrated ERV fan box shall be fabricated from heavy gauge galvanized steel.

3.2 The ERV Fan Box connected electrically to the vertical stack chassis via a two-piece pin and socket interconnection. Connection by others.

## 4.0 ERV Core

4.1 The ERV Core consists of a membrane constructed from a composite polymer material that allows heat and water vapor to transfer from one air stream to the other while preventing cross contamination.

4.2 The core shall be encased in a heavy gauge galvanized steel shell and all exterior shell sides are insulated with 1/4" neoprene insulation.

4.3 The openings of the core shall be treated with a gasket to ensure tight seal with the air stream channels in the cabinet.

## 5.0 Blower and Motor

5.1 The ERV fresh air and exhaust air blowers shall be statically and dynamically balanced.

5.2 The complete blower section including motor shall be easily accessible and removable for service.

5.3 The blower motors shall be direct drive EC motor, single phase with integral thermal overload protection.

5.4 The blower wheels shall be forward curbed, SWSI centrifugal blower.

5.5 The fresh air and exhaust air fan speeds are controlled by a single fan speed controller that is adjustable in the field.

## 6.0 Filter

6.1 Both the exhaust and supply air stream entering the ERV core is filtered.

6.2 The filters shall be a cleanable wire frame type and easily accessible. They are shipped with the ERV fan box.

## 7.0 System

7.1 The ERV unit shall be controlled by the Vertical Stack unit chassis. The Vertical Stack main supply fan must be operating for the ERV apparatus to operate. Other sequence of operations is available as options.

7.2 ERV fans will be enabled to operate:

- On a call for heating from the thermostat
- On a call for cooling from the thermostat
- When thermostat fan selector switch is placed in the "ON" mode
- When a field mounted remote-control switch, by others is closed (wired by others, for 120 volt by others)

7.3 The ERV fan box is powered by line voltage supplied from the Vertical Stack unit chassis.

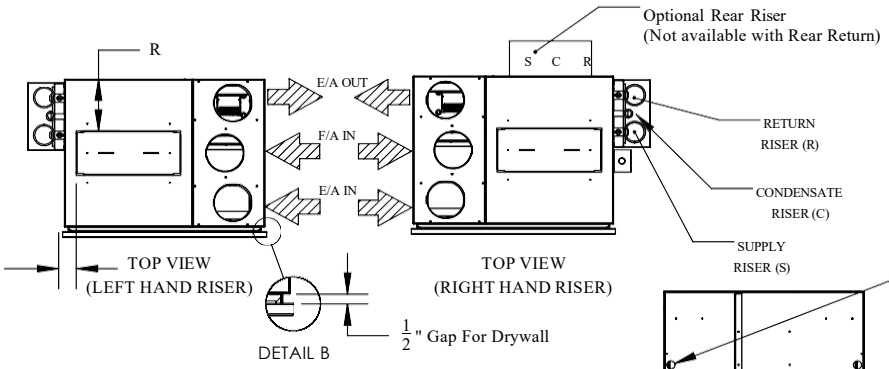
7.4 The defrost sensor will detect a frost build up on the heat exchanger based on temperature and will terminate the operation of the fresh air fan until the temperature restores to normal limits (above 45 $^{o}$F).

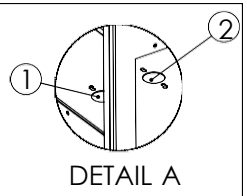
# IKEC 008-018 Detailed Drawing

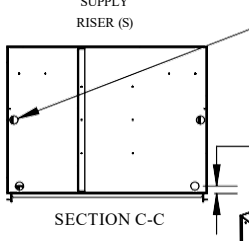
1. Water Inlet is 1/2" MPT
2. Water Outlet is 1/2" MPT
3. Condensate Drain is 3/4" ID Hose
4. Optional Cabinet Base Extensions (Various Heights Available)
5. Knockouts for Supply Ducting
6. Electrical Box KnockOut for Electrical Connections (4.375" Height X 2.875" Width X 2.375" Depth)
7. 7/8" Hole to run T-Stat wiring through the cabinet
8. Knockout For Optional 120V Relay for ERV Interlock
9. 7/8" Hole for 24V bathroom timer wiring

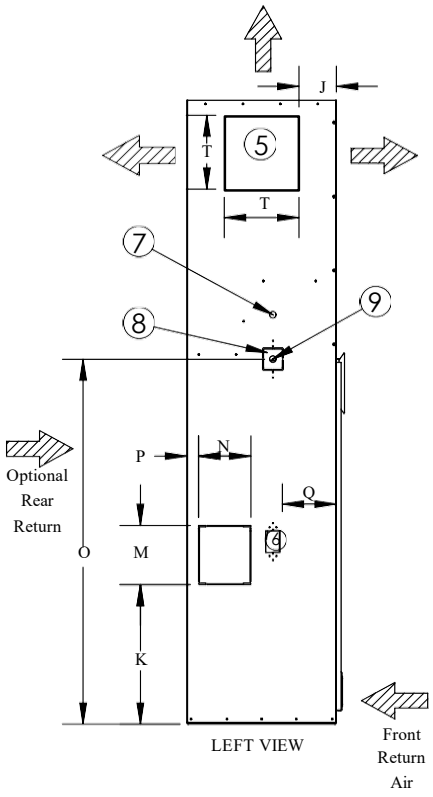
REMARKS

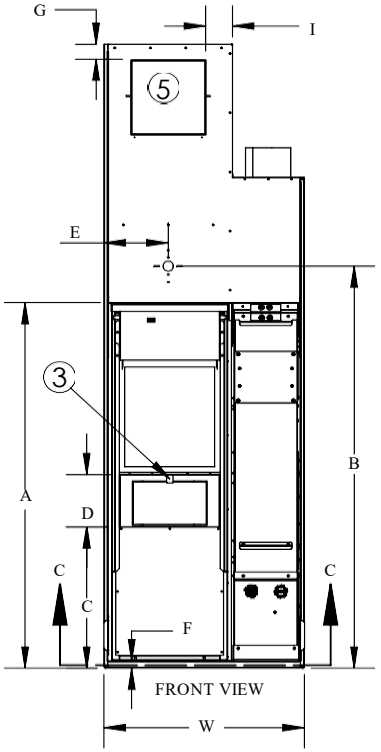
1) Disposable Filter Included (16.75"H X 14"W X 1"T)
2) 18" Long Supply, Return and Condensate Hoses Included

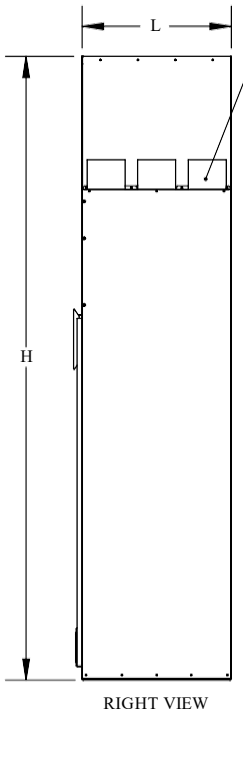


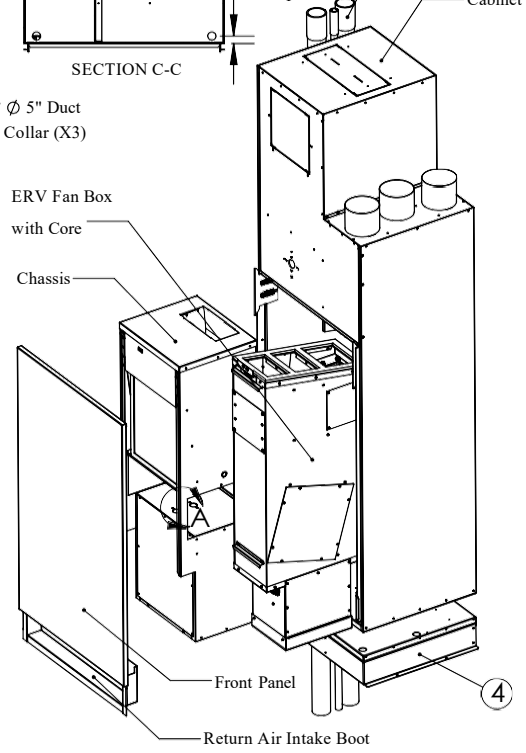




| PHYSICAL DATA (IN) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | W | L | A | B | C | D | E | F | G | I | J | K | M | N | O | P | Q | R | S | T |
| 84 3/8" | 26 3/4" | 20" | 49 1/2" | 54 3/8" | 19 1/8" | 7" | 5 5/8" | 1" | 2" | 5 3/8" | 5" | 18 7/8" | 8" | 7" | 49 3/8" | 1 1/2" | 7 1/4" | 7" | 3 3/8" | 10" |

| | NAME: | DATE (MM/DD/YYYY): |
|---|---|---|
| DRAWN BY: | AD | 05/24/2022 |
| CHECKED BY: | AJM / MRH | 05/24/2022 |

BULLDOG HEAT PUMP

PROPRIETARY AND CONFIDENTIAL



TITLE: Bulldog Inkeeper Core ERV Cabinet Dimensional Data

UNIT MODEL: IKEC 008-018

SCALE: NTS

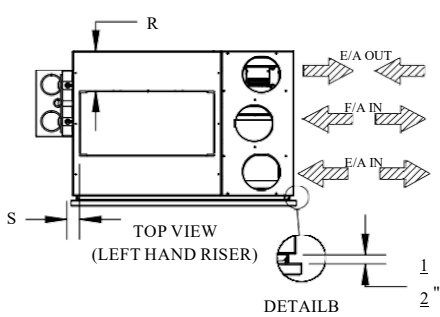
SHEET 1 OF 1

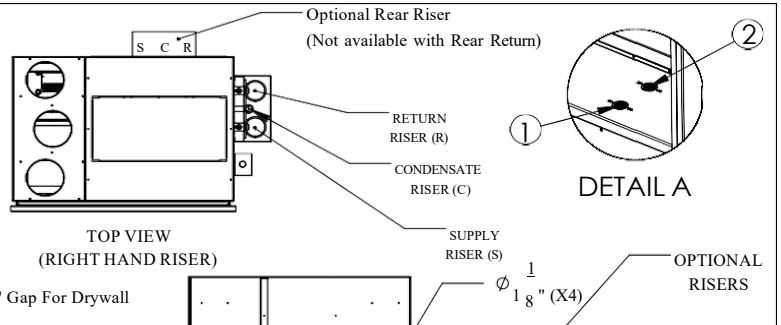
Last saved on: Tuesday, May 24, 2022; In the interest of continuous improvement, drawing subject to change without notice.

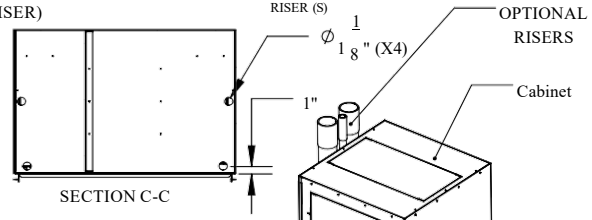
1. Water Inlet is 1/2" MPT
2. Water Outlet is 1/2" MPT
3. Condensate Drain is 3/4" ID Hose
4. Optional Cabinet Base Extensions (Various Heights Available)
5. Knockouts for Supply Ducting
6. Electrical Box KnockOut for Electrical Connections (4.375" Height X 2.875" Width X 2.375" Depth)
7. 7/8" Hole to run T-Stat wiring through the cabinet
8. Knockout For Optional 120V Relay for ERV Interlock
9. 7/8" Hole for 24V bathroom timer wiring

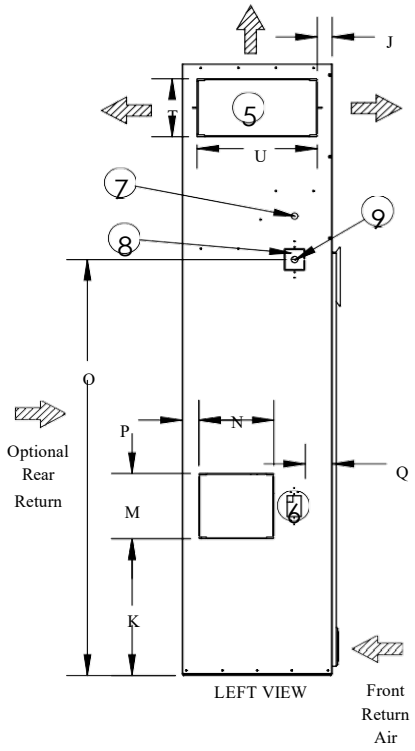
REMARKS

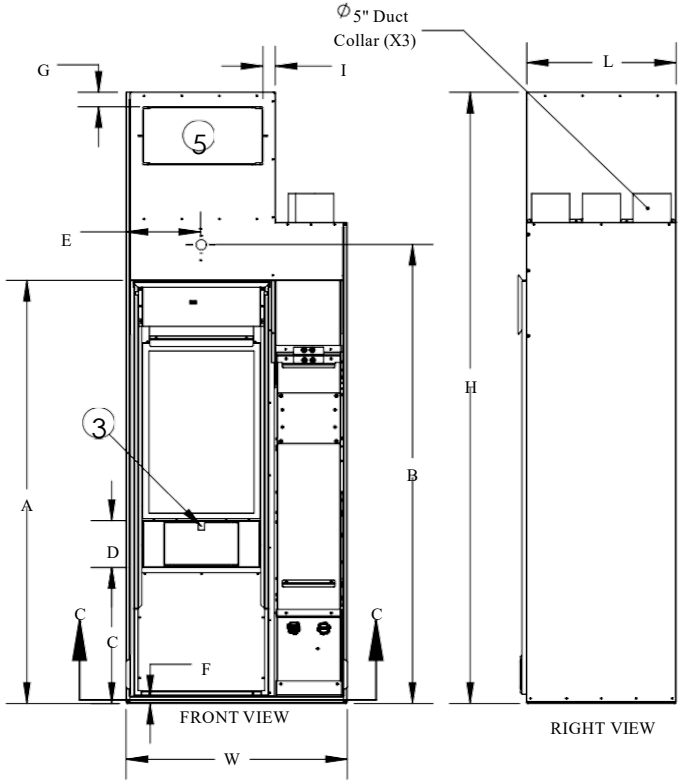
1) Disposable Filter Included (16"H X 24"W X 1"T)
2) 18" Long Supply, Return and Condensate Hoses Included

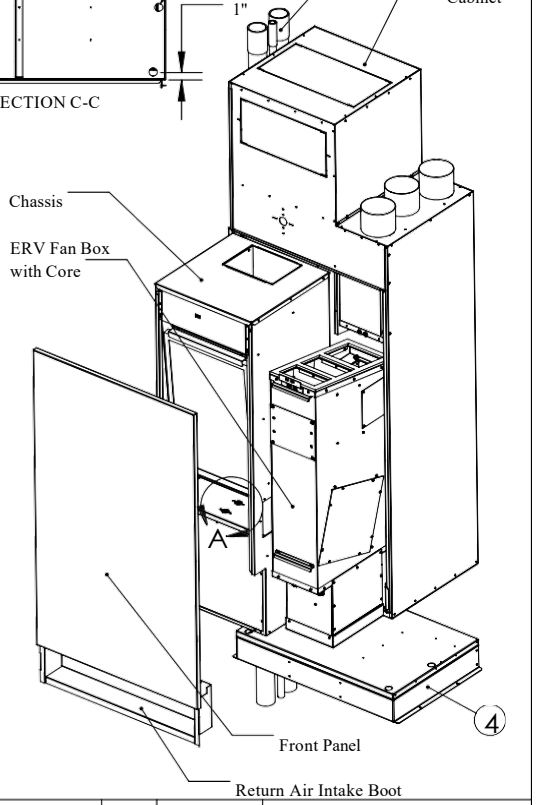



| PHYSICAL DATA (IN) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | W | L | A | B | C | D | E | F | G | I | J | K | M | N | O | P | Q | R | S | T | U |
| 84 3/8" | 29 1/2" | 20" | 58 3/8" | 63 3/8" | 18 3/4" | 16 1/2" | 7/8" | 1" | 2" | 5/8" | 2" | 18 7/8" | 9" | 10" | 57 3/8" | 1 1/2" | 5/8" | 1 1/2" | 1 5/8" | 8" | 16" |

| | NAME: | DATE (MM/DD/YYYY): |
|---|---|---|
| DRAWN BY: | AD | 05/24/2022 |
| CHECKED BY: | AJM / MRH | 05/24/2022 |

BULLDOG HEAT PUMP
PROPRIETARY AND CONFIDENTIAL



TITLE: Bulldog Homekeeper Core ERV Cabinet Dimensional Data

| UNIT MODEL | HKEC-1 016-030 |
|---|---|
| SCALE: NTS | SHEET 1 OF 1 |

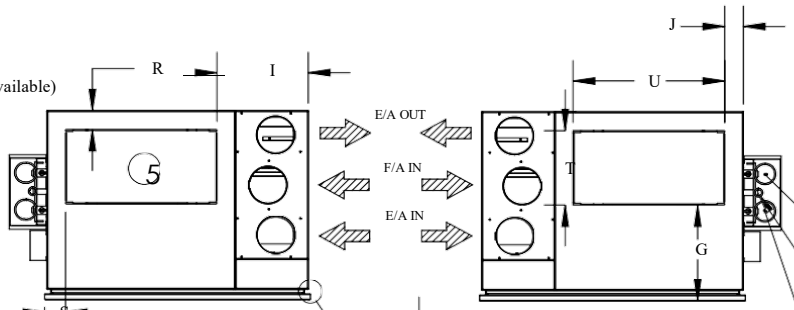
Last saved on: Wednesday, May 25, 2022; In the interest of continuous improvement, drawing subject to change without notice.

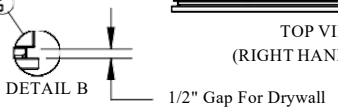
# HKEC 036-048 Detailed Drawing

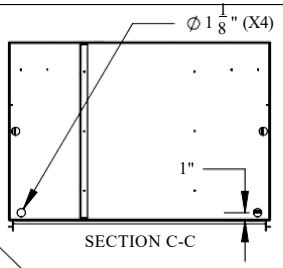
1. Water Inlet is 3/4" MPT
2. Water Outlet is 3/4" MPT
3. Condensate Drain is 3/4" ID Hose
4. Optional Cabinet Base Extensions (Various Heights Available)
5. Knockouts for Supply Ducting
6. Electrical Box KnockOut for Electrical Connections (4.375" Height X 3.875" Width X 2.375" Depth)
7. 7/8" Hole to run T-Stat wiring through the cabinet
8. Knockout For Optional 120V Relay for ERV Interlock
9. 7/8" Hole for 24V bathroom timer wiring

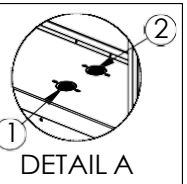
REMARKS

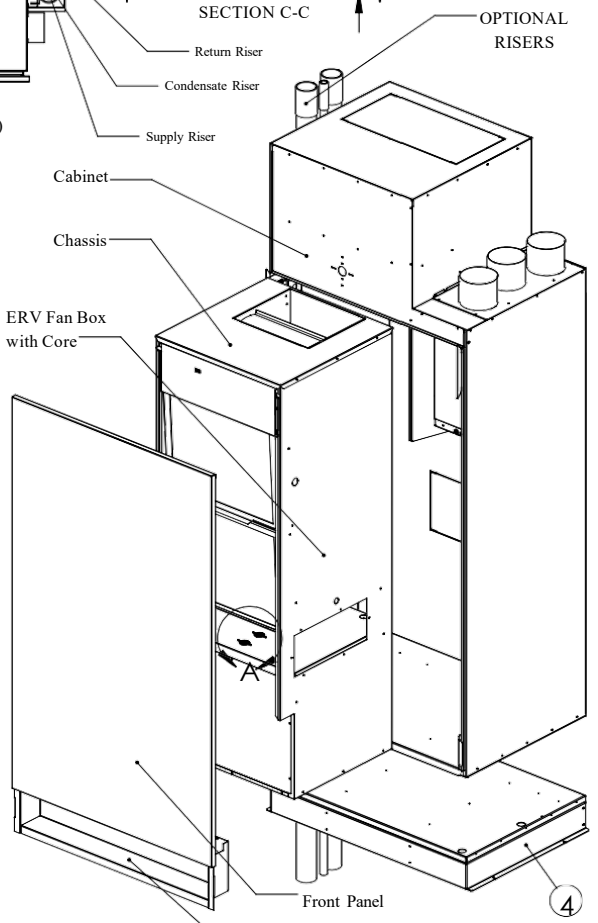
1) Disposable Filter Included (16"H X 20"W X 1"T)
2) 18" Long Supply, Return and Condensate Hoses Included

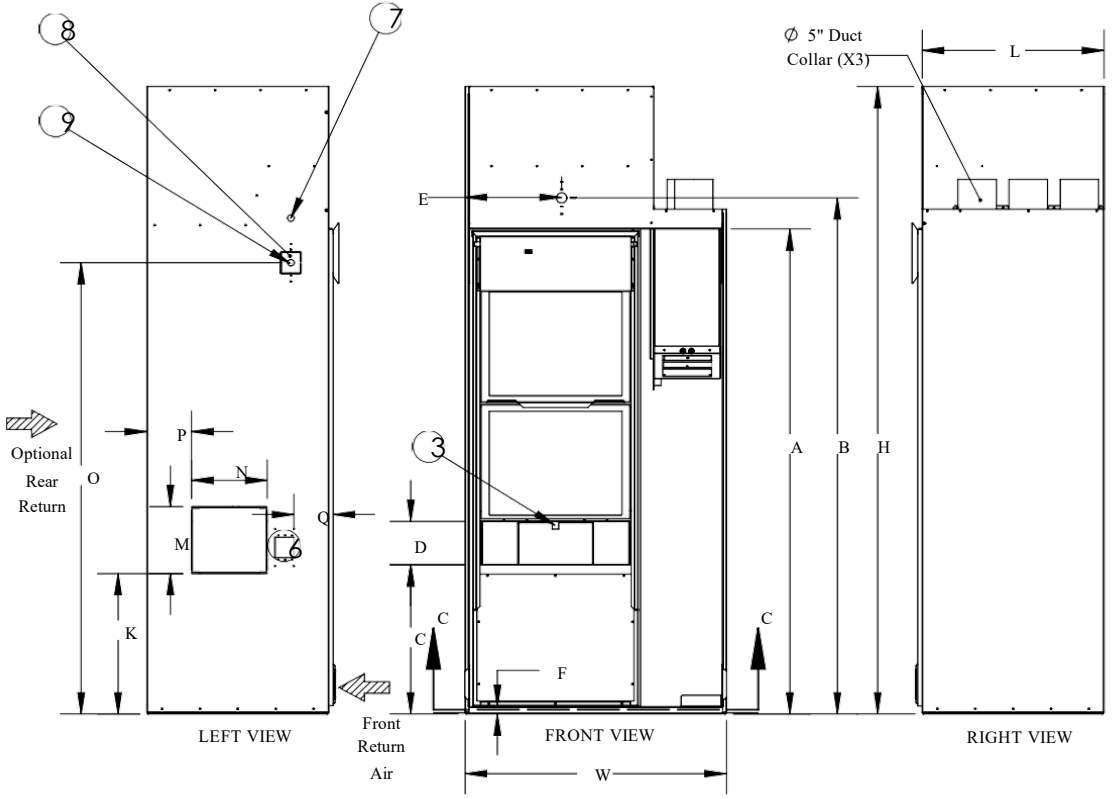



PHYSICAL DATA (IN)

| H | W | L | A | B | C | D | E | F | G | I | J | K | M | N | O | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84 3/8" | 34 1/2" | 24" | 65 1/4" | 69 3/8" | 20" | 5 7/8" | 12 3/4" | 1" | 12 7/8" | 12" | 2 1/2" | 18 7/8" | 9" | 10" | 60 5/8" | 5 7/8" | 5 1/8" | 2 1/2" | 2 3/4" | 10" | 20" |

| | NAME: | DATE (MM/DD/YYYY): |
|---|---|---|
| DRAWN BY: | AD | 05/24/2022 |
| CHECKED BY: | AJM / MRH | 05/24/2022 |

BULLDOG HEAT PUMP
PROPRIETARY AND CONFIDENTIAL



TITLE: Bulldog Homekeeper Core ERV Cabinet Dimensional Data

UNIT MODEL: HKEC-2 036-048

SCALE: NTS

SHEET 1 OF 1

Last saved on: Wednesday, May 25, 2022; In the interest of continuous improvement, drawing subject to change without notice.

# EMC-250-210-260-04-S

Application Rating is outside the scope of the AHRI ERV Certification Program but is rated in accordance with AHRI Standard 1060.

https://core.life/en/ | Master calculator - 2021-10-05- R82 - WD | software version 45

**General information**

| | | | | | |
|---|---|---|---|---|---|
| **Product category** | EMC Residential | **Elevation** | 0 **ft** | **total mass** | |
| **Frame Type** | Plastic, L | **Pressure** | 14.7 **psia** | **Tag** | |

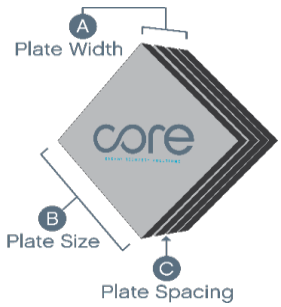
**Design Conditions**

| | Summer Outdoor | Summer Return | Winter Outdoor | Winter Return | |
|---|---|---|---|---|---|
| **Standard Airflow** | 50 | 50 | 50 | 50 | scfm |
| **Dry Bulb Temp** | 91.0 | 75.0 | -4.0 | 70.0 | °F |
| **Wet Bulb Temp** | 73.0 | 62.0 | -4.1 | 50.0 | °F |
| **Relative Humidity** | 42.6 | 48.0 | 96.4 | 20.0 | % |

**Warning**

**Product Dimensions**

| | |
|---|---|
| **A-Width (Per Section)** | 8.3 in |
| **B-Plate Size** | 9.8 in |
| **C-Plate Spacing** | 0.09 in |
| **D-Diagonal** | 13.9 in |
| **# Sections** | 1 |
| **Cores per section** | 1 |
| **Rows Deep** | 1 |
| **Total cores (Single)** | 1 |
| **Width per Row** | 8.3 in |
| **Total Width (All Rows)** | 8.3 in |
| **Total Cores (Multicore) **** | 0 |




** Each multicore consists of 4 single cores, shipped pre-assembled.

| | Summer Outdoor (OA) | Summer Return (RA) | Winter Outdoor (OA) | Winter Return (RA) |
|---|---|---|---|---|
| **Airflow [scfm]** | 50 | 50 | 50 | 50 |
| **Dry Bulb Temp [°F]** | 91.0 | 75.0 | -4.0 | 70.0 |
| **Wet Bulb Temp [°F]** | 73.0 | 62.0 | -4.1 | 50.0 |
| **Relative Humidity [%]** | 42.6 | 48.0 | 96.4 | 20.0 |
| **Moisture Ratio [grains/lb]** | 93.0 | 62.1 | 4.3 | 21.7 |
| **Enthalpy [Btu/lb]** | 36 | 28 | 0 | 20 |
| **Energy flow rate [Btu/h]** | 8,201 | 6,229 | -72 | 4,537 |

| | Summer Exhaust (EA) | Summer Supply (SA) | Winter Exhaust (EA) | Winter Supply (SA) |
|---|---|---|---|---|
| **Airflow [scfm]** | 50 | 50 | 50 | 50 |
| **Dry Bulb Temp [°F]** | 85.6 | 80.4 | 21.1 | 44.9 |
| **Wet Bulb Temp [°F]** | 68.6 | 67.1 | 19.8 | 34.5 |
| **Relative Humidity [%]** | 42.2 | 50.2 | 83.2 | 29.2 |
| **Moisture Ratio [grains/lb]** | 77.2 | 77.9 | 13.1 | 12.8 |
| **Enthalpy [Btu/lb]** | 33 | 32 | 7 | 13 |
| **Energy flow rate [Btu/h]** | 7,345 | 7,082 | 1,587 | 2,868 |

| | Summer | | Winter | |
|---|---|---|---|---|
| **Supply pressure drop** | 0.04 | in.H2O | 0.04 | in.H2O |
| **Exhaust pressure drop** | 0.16 | in.H2O | 0.16 | in.H2O |
| **Sensible effectiveness** | 66.1 | % | 66.1 | % |
| **Latent effectiveness** | 49.0 | % | 49.0 | % |
| **Total effectiveness** | 56.7 | % | 63.9 | % |
| **Temperature ratio** | 66.1 | % | 66.1 | % |
| **Moisture recovery ratio** | 49.0 | % | 49.0 | % |
| **Enthalpy recovery ratio** | 56.7 | % | 63.8 | % |
| **Supply air face velocity** | 93 | fpm | 93 | fpm |
| **Exhaust air face velocity** | 93 | fpm | 93 | fpm |
| **Moisture transferred** | 0.5 | lb/h | 0.3 | lb/h |
| **Total energy saved** | 1,119 | Btu/h | 2,941 | Btu/h |
| **Moisture balance** | 0.00 | | 0.00 | |
| **Energy balance** | 0.00 | | 0.01 | |
| **Condensation rate** | 0.00 | lb/h | 0.00 | lb/h |
| **Net supply airflow** | 50 | scfm | 50 | scfm |
| **Supply flow ratio** | 1.00 | | 1.00 | |

| | | | | |
|---|---|---|---|---|
| **Pressure differential** | -0.5 | 0 | 0.5 | in.H2O |
| **EATR** | 0.5 | 0.5 | 0.5 | % |
| **OACF** | 0.995 | 0.995 | 0.995 | |

# EMC-250-210-200-04-S

Application Rating is outside the scope of the AHRI ERV Certification Program but is rated in accordance with AHRI Standard 1060.

https://core.life/en/ | Master calculator - 2021-10-05- R82 - WD | software version 45

**General information**

| | | | | | |
|---|---|---|---|---|---|
| **Product category** | EMC Residential | **Elevation** | 0 **ft** | **total mass** | |
| **Frame Type** | Plastic, L | **Pressure** | 14.7 **psia** | **Tag** | |

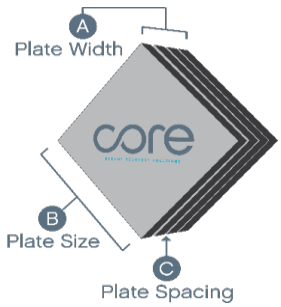
**Design Conditions**

| | Summer Outdoor | Summer Return | Winter Outdoor | Winter Return | |
|---|---|---|---|---|---|
| **Standard Airflow** | 100 | 100 | 100 | 100 | scfm |
| **Dry Bulb Temp** | 91.0 | 75.0 | -4.0 | 70.0 | °F |
| **Wet Bulb Temp** | 73.0 | 62.0 | -4.1 | 50.0 | °F |
| **Relative Humidity** | 42.6 | 48.0 | 96.4 | 20.0 | % |

**Warning**

**Product Dimensions**

| | |
|---|---|
| **A-Width (Per Section)** | 8.3 in |
| **B-Plate Size** | 9.8 in |
| **C-Plate Spacing** | 0.06 in |
| **D-Diagonal** | 13.9 in |
| **# Sections** | 1 |
| **Cores per section** | 1 |
| **Rows Deep** | 1 |
| **Total cores (Single)** | 1 |
| **Width per Row** | 8.3 in |
| **Total Width (All Rows)** | 8.3 in |
| **Total Cores (Multicore) **** | 0 |




** Each multicore consists of 4 single cores, shipped pre-assembled.

| | Summer Outdoor (OA) | Summer Return (RA) | Winter Outdoor (OA) | Winter Return (RA) |
|---|---|---|---|---|
| **Airflow [scfm]** | 100 | 100 | 100 | 100 |
| **Dry Bulb Temp [°F]** | 91.0 | 75.0 | -4.0 | 70.0 |
| **Wet Bulb Temp [°F]** | 73.0 | 62.0 | -4.1 | 50.0 |
| **Relative Humidity [%]** | 42.6 | 48.0 | 96.4 | 20.0 |
| **Moisture Ratio [grains/lb]** | 93.0 | 62.1 | 4.3 | 21.7 |
| **Enthalpy [Btu/lb]** | 36 | 28 | 0 | 20 |
| **Energy flow rate [Btu/h]** | 16,403 | 12,459 | -145 | 9,074 |

| | Summer Exhaust (EA) | Summer Supply (SA) | Winter Exhaust (EA) | Winter Supply (SA) |
|---|---|---|---|---|
| **Airflow [scfm]** | 100 | 100 | 100 | 100 |
| **Dry Bulb Temp [°F]** | 84.8 | 81.2 | 24.6 | 41.4 |
| **Wet Bulb Temp [°F]** | 68.1 | 67.6 | 22.4 | 32.1 |
| **Relative Humidity [%]** | 42.5 | 49.7 | 74.1 | 31.6 |
| **Moisture Ratio [grains/lb]** | 76.0 | 79.1 | 13.9 | 12.1 |
| **Enthalpy [Btu/lb]** | 32 | 32 | 8 | 12 |
| **Energy flow rate [Btu/h]** | 14,516 | 14,339 | 3,607 | 5,303 |

| | Summer | | Winter | |
|---|---|---|---|---|
| **Supply pressure drop** | 0.30 | in.H2O | 0.30 | in.H2O |
| **Exhaust pressure drop** | 0.28 | in.H2O | 0.28 | in.H2O |
| **Sensible effectiveness** | 61.3 | % | 61.3 | % |
| **Latent effectiveness** | 44.9 | % | 44.9 | % |
| **Total effectiveness** | 52.3 | % | 59.2 | % |
| **Temperature ratio** | 61.3 | % | 61.3 | % |
| **Moisture recovery ratio** | 44.9 | % | 44.9 | % |
| **Enthalpy recovery ratio** | 52.3 | % | 59.1 | % |
| **Supply air face velocity** | 187 | fpm | 187 | fpm |
| **Exhaust air face velocity** | 187 | fpm | 187 | fpm |
| **Moisture transferred** | 0.9 | lb/h | 0.5 | lb/h |
| **Total energy saved** | 2,064 | Btu/h | 5,448 | Btu/h |
| **Moisture balance** | 0.00 | | 0.00 | |
| **Energy balance** | 0.00 | | 0.01 | |
| **Condensation rate** | 0.00 | lb/h | 0.00 | lb/h |
| **Net supply airflow** | 100 | scfm | 100 | scfm |
| **Supply flow ratio** | 1.00 | | 1.00 | |

| | | | | |
|---|---|---|---|---|
| **Pressure differential** | -0.5 | 0 | 0.5 | in.H2O |
| **EATR** | 0.5 | 0.5 | 0.5 | % |
| **OACF** | 0.995 | 0.995 | 0.995 | |
| | | | | |

# ERV Performance Test Results

ELEMENT

CGC MODEL HKEC-ERV 0°C TEST AT 102 CFM (48.2 L/S)

AVERAGE VALUES DURING TEST

| STATIONS | 1 COLD SUPPLY | 2 WARM SUPPLY | 3 WARM EXHAUST | 4 COLD EXHAUST | NET WARM SUPPLY |
|---|---|---|---|---|---|
| AIR FLOW std L/S | 47.2 | 49.4 | 49.4 | 49.0 | 48.2 |
| TEMPERATURE °C | -.1 | 15.5 | 22.0 | 10.6 | 15.4 |
| R.H. % | 76.8 | 41.0 | 40.1 | 66.3 | |
| DEW POINT °C | -3.2 | 2.3 | 7.8 | 4.6 | |
| HUMIDITY RATIO | .0029 | .0045 | .0066 | .0053 | .0044 |
| ENTHALPY KJ/KG | 7.2 | 26.9 | 38.9 | 24.0 | 26.6 |
| ENERGY CONTENT KW | .41 | 1.60 | 2.31 | 1.41 | |
| STATIC PRESSURE Pa | -32 | 30 | -31 | 29 | (Initial) |
| STATIC PRESSURE Pa | -32 | 30 | -30 | 28 | (Final) |

CASE TEMP(D) 17.0°C AMBIENT TEMP 22.2°C TOTAL READINGS 60

H/ERV SURFACE MEASUREMENT 1.60 m²

CALCULATED EXTERNAL INPUT .29 KW

FROM ABOVE AVERAGES .10 KW

CALCULATIONS (ADJUSTED FOR CROSS-LEAKAGE)

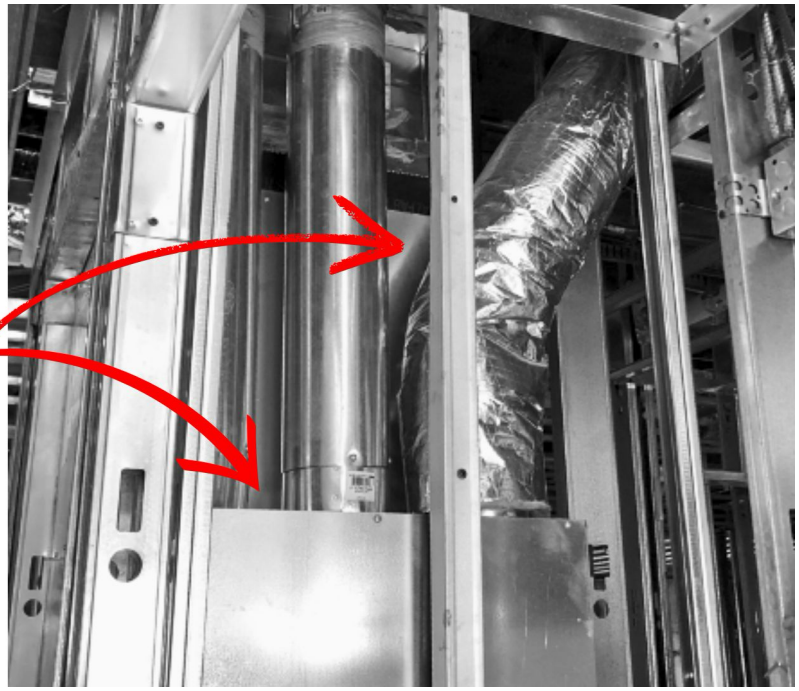
| | | | |
|---|---|---|---|
| SENSIBLE ENERGY RECOVERED | 3233 KJ | .898 KWH | .898 KW |
| SENSIBLE ENERGY EXHAUSTED | 4623 KJ | 1.284 KWH | 1.284 KW |
| SENSIBLE RECOVERY EFFICIENCY | 60.1 % | | |
| ADJUSTED SENSIBLE RECOVERY EFFICIENCY | 64.6 % | | |
| TOTAL ENERGY RECOVERED | 4040 KJ | 1.122 KWH | 1.122 KW |
| TOTAL ENERGY EXHAUSTED | 6623 KJ | 1.840 KWH | 1.840 KW |
| TOTAL RECOVERY EFFICIENCY | 54.2 % | | |
| ADJUSTED TOTAL RECOVERY EFFICIENCY | 57.3 % | | |
| WATER RECOVERED | .32 Kg | | |
| WATER EXHAUSTED | .78 Kg | | |
| LATENT PERFORMANCE COEFFICIENT | .41 | | |
| CASING LOSSES | 245 KJ | .068 KWH | 68.1 W |
| DEFROST ENERGY (Recirc) | 0 KJ | 0.000 KWH | 0.0 W |
| SUPPLY FAN ENERGY | 132 KJ | .037 KWH | 36.6 W |
| EXHAUST FAN ENERGY | 132 KJ | .037 KWH | 36.6 W |
| CSA C439-18 Errata & FI, Eq.18a: QL1 | 0 KJ | | |
| CSA C439-18 Errata & FI, Eq.18b: QL2 | 0 KJ | | |
| ENERGY LOSS: QL = QL1 + QL2 | 0 KJ | | |
| EXHAUST AIR TRANSFER RATIO | .0255 | .0255 R1 | 0.0000 R2 |
| SF6 CONCENTRATION RATIO, TEST 1 | | .0255 B'2/B'3 | .9882 B'4/B'3 |
| SF6 CONCENTRATION RATIO, TEST 2 | | .9684 B"2/B"1 | .0190 B"4/B"1 |
| TOTAL EXHAUST FLOW | 178 m3 | | |
| NET EXHAUST FLOW | 173 m3 | | |
| TOTAL SUPPLY FLOW | 178 m3 | | |
| NET SUPPLY FLOW | 173 m3 | | |
| NET OUTDOOR AIRFLOW | 174 m3 | 48.3 L/S | |
| APPARENT SENSIBLE EFFECTIVENESS | 70.5 % | | |
| START TIME | 2023-02-16 12:24:45 | READING # | 61 |
| END TIME | 2023-02-16 13:23:45 | READING # | 120 |
| ELEMENT SAMPLE | 23-06-E0008 | FILENAME | 23-06-E0008-M |
| JOB NUMBER | 23-06-E0008 | | |
| CALCULATED | 2023-02-16 | | |

# ERV Duct Installation

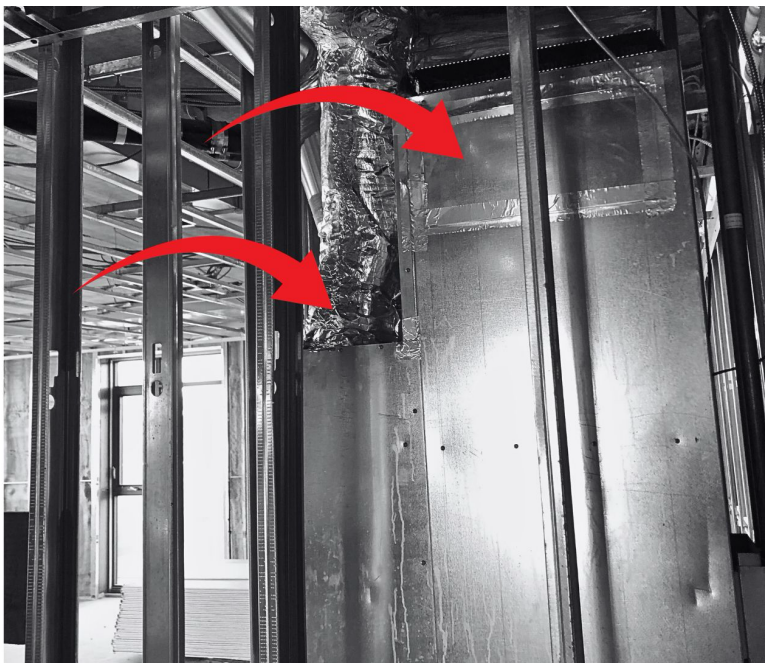
## 8.0 Duct Installation

8.1 ERV duct connection collars are provided-located on the cabinet to reduce site supplied materials and labour hours. Duct connection sizes are common industry standard alleviating the need for special adapters.

**The design of the Bulldog cabinets allows more space and flexibility for the contractor to route ductwork.**



**A Bulldog heat pump provides more space and flexibility for ERV ductwork. There is also a rear supply air knockout when required.**



BULLDOG HEAT PUMP

www.bulldogheatpump.com

CGC GROUP

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