

First Co.

FRESH-PAK HW

Hydronic Heating (EFW)

Space Constrained Vertical Unit With Fully Integrated ERV

1 – 2.5 Tons

Up to 47,800 BTUH Hydronic Heat

11.7 SEER2

R454B

ecoseries
FRESH-PAK



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NOMENCLATURE

| | | | | | | | | | | | |
|---|----------|----------|-----------|----------|-----------|----------|----------|----------|-----------|-----------|--|
| E | F | W | 24 | 2 | 05 | D | 0 | 0 | CF | 00 | F |
| SERIES E - Eco Series | | | | | | | | | | | BRAND F - First Co. |
| UNIT TYPE F - Cooling Only with ERV | | | | | | | | | | | OPTIONS: GENERAL 00 - Standard |
| HEAT TYPE W - Hot Water Coil • Hydronic Heat | | | | | | | | | | | OPTIONS: CABINET CF - Large Cabinet ERV STD (20" x 26" in.) Foil Face CG - Large Cabinet ERV STD (20" x 26") Fiberglass |
| NOMINAL COOLING CAPACITY 12 - 12,000 BTU/H 18 - 18,000 BTU/H 24 - 24,000 BTU/H 30 - 30,000 BTU/H | | | | | | | | | | | OPTIONS: CONTROL 0 - Standard B - Simplified |
| VOLTAGE 2 - 208-230V 1Ph | | | | | | | | | | | ACCESSORY CONNECTIONS 0 - None |
| HEAT TYPE (ROWS) 2R - 2 Row HW Coil 3R - 3 Row HW Coil | | | | | | | | | | | MAJOR REVISION D - R454B Initial Release |

FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

PRODUCT DESCRIPTION

- Space constrained vertical unit with integrated energy recovery ventilator (ERV)
- Pre-wired and pre-charged with R-454B refrigerant, capable of delivering conditioned air to multiple rooms
- Easily installs into a closet or mechanical room on an exterior wall, utilizing a minimal amount of floor space
- Controlled by a standard low voltage thermostat with ventilation capabilities

APPLICATIONS

Hospitality, Apartments/Condominiums, Assisted Living/Memory Care, Student Housing, Senior Living and Modular/Prefabricated Buildings.

STANDARD FEATURES

- Shipped ready for top supply and front return (with optional ducted return)
- Insulated compartment to improve cooling performance, reduce noise, and prevent sweating
- ECM indoor blower & outdoor fan motor to provide precise airflow selection and improve system efficiency
- High-efficiency scroll and rotary compressors with double isolated compressor mount to lower noise and vibration.
- Larger evaporator coil with low face velocity for improved cooling performance
- Drain pan with corrosion resistant coating to drain condensate in cooling and heating operations
- Thermal expansion valve (TXV) for cooling to optimize performance
- High pressure switch protection
- Filter brackets and disposable filter shipped with unit for field installation; no tool needed to replace filter
- Multi-function microprocessor control board
- Factory installed condensate float switch for overflow protection
- Refrigerant leak mitigation on units over 4lbs of charge

Warning:

The incoming conductors of the service switch remain energized when the service switch is pulled out. Always disconnect power at the main source as well as the service switch before servicing. All lockout/tag out procedures must be followed.

SERVICEABILITY FEATURES

- Easy access for in-place service of most components
- All electrical components and control boards are serviceable from front of the unit

WARRANTY

Five (5) year limited warranty on compressor and parts

REQUIRED ACCESSORIES

- Single piece weight bearing wall sleeves with integrated ventilation air intake and exhaust ports for various wall thicknesses from 5" to 20"
- Flush type aluminum louver with finish and paint options
- Standard low voltage thermostat with ventilation capabilities
- WLAN service stick to program ERV control board (not required for Simplified Controls option)

FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

OPTIONAL ACCESSORIES

- Interior Access Panels - Louvered or Solid
- ERV Sensors - Humidity or Carbon Dioxide (field provided)
- ERV Exhaust Controls - Analog Egg Timer or Digital Timer Switch (field provided)

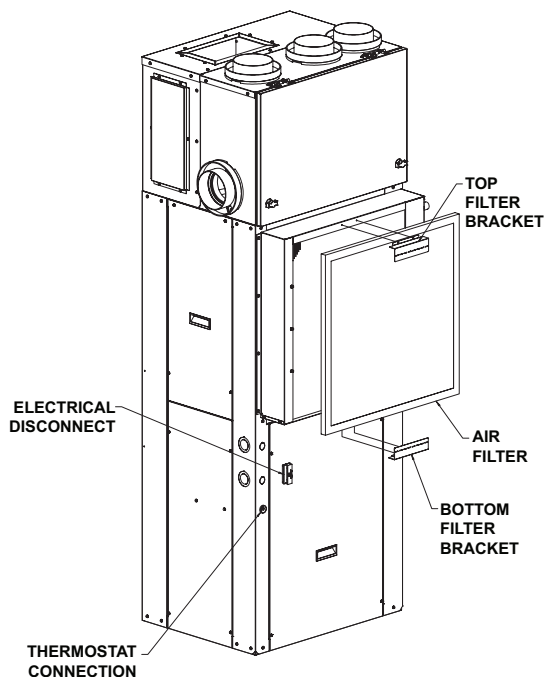
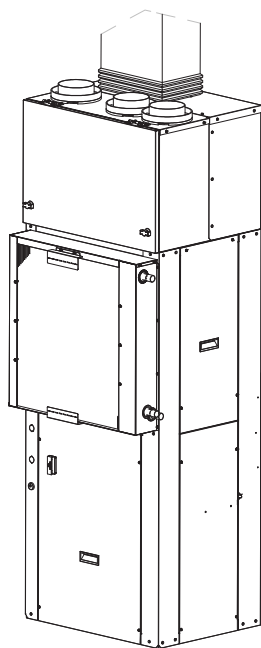
STANDARD UNIT FEATURES

Ductwork Connections - Shipped ready for top supply duct connection and front non-ducted return with optional ducted return. If require by code, return air can be ducted to the unit.

NOTE: If ducted return is utilized, the filter will need to be relocated to a suitable location outside the cabinet for ease of service.

Filter Rack - Filter brackets and a disposable filter ship with each unit to be field installed over the evaporator coil.

NOTE: Do not use filters which will cause the total external static pressure, including ducts, louvers, registers, and filters to exceed 0.5 in. w.c.



MULTI-FUNCTION MICROPROCESSOR CONTROL BOARD

Evaporator coil low temperature protection – During the cooling mode, should the evaporator coil experience either a low temperature condition that could result in ice buildup on the coil or a reduced air flow situation, a temperature sensor attached to the coil will de-energize the unit. The sensor will re-energize the unit when the coil warms back up.

Random restart – When power is turned on after a power outage, a built-in random restart delay of 3-4 minutes prevents all compressors from restarting simultaneously.

Compressor restart delay – This delay ensures that system pressures are allowed to equalize before a compressor restart, which extends compressor life.

Fan delay – A fan delay allows the evaporator blower to continue running for up to 45 seconds after the thermostat is satisfied which maximizes cooling performance.

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SPACE CONSTRAINED VERTICAL UNIT

SERVICE PULL OUT SWITCH

Provides a visible disconnecting means performing maintenance.

WARNING: This service switch does not de-energize the incoming power supply to the unit. ALWAYS turn off all power to the unit before servicing equipment. There may be more than one disconnect switch. All lockout/tag out procedures should be followed..

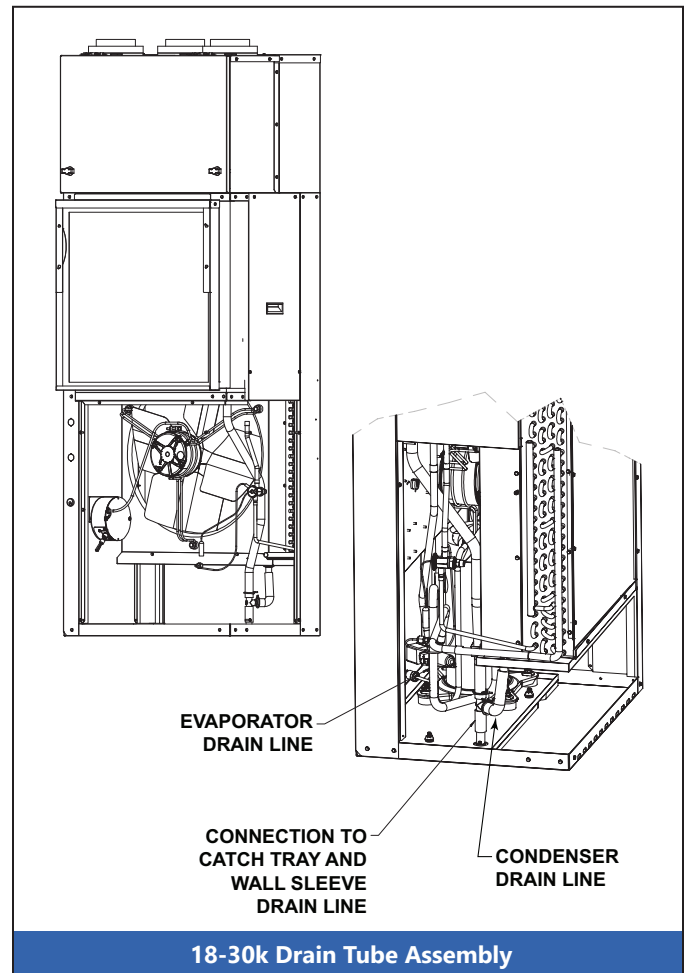
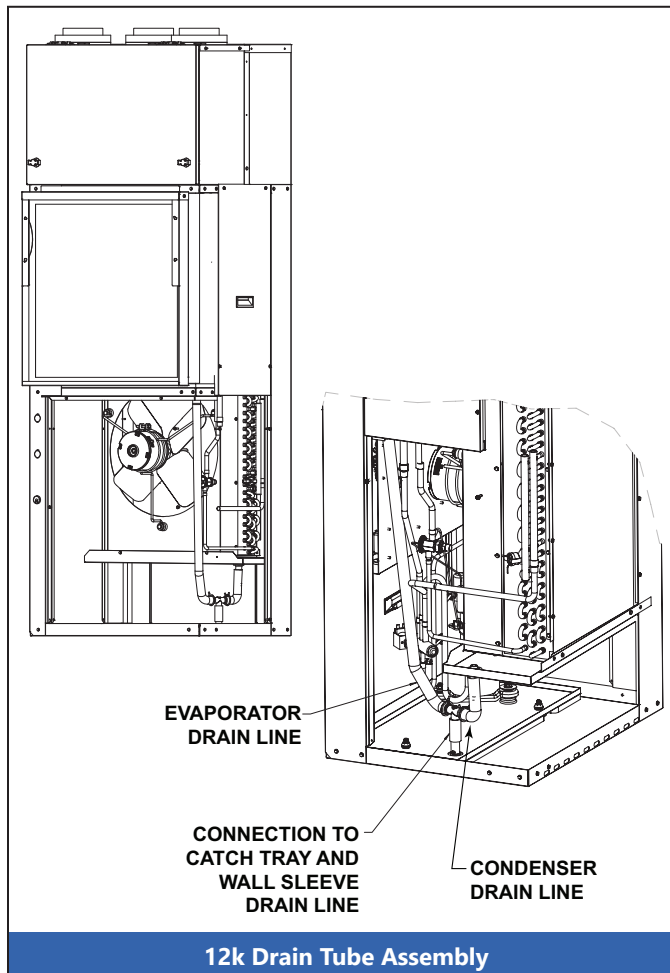
CONDENSATE SYSTEM

Primary Condensate

Factory installed drain line connects the evaporator drain pan to a vertical pipe connection in the unit base pan. Evaporator condensate is delivered from the unit to a catch tray in the wall sleeve and exits the sleeve through the 3/4" male NPT fitting. This design allows the plumber to completely pipe the drain to a condensate riser during the rough-in stage, thus eliminating condensate connection problems usually encountered when trying to connect the HVAC drain to the riser after the HVAC unit is installed in the closet. This features also allows the unit to be removed for service without disconnecting the condensate piping. This configuration does not require any additional closet space to make the drain connection, as do some competitive products.

Secondary Condensate

If for any reason, the primary condensate riser becomes clogged, water will fill the catch tray and then be diverted through the wall sleeve to the exterior of the building, rather than be allowed to overflow into the closet or living area. Rain water entering the wall sleeve is automatically diverted to the condensate drain.



FRESH-PAK HW

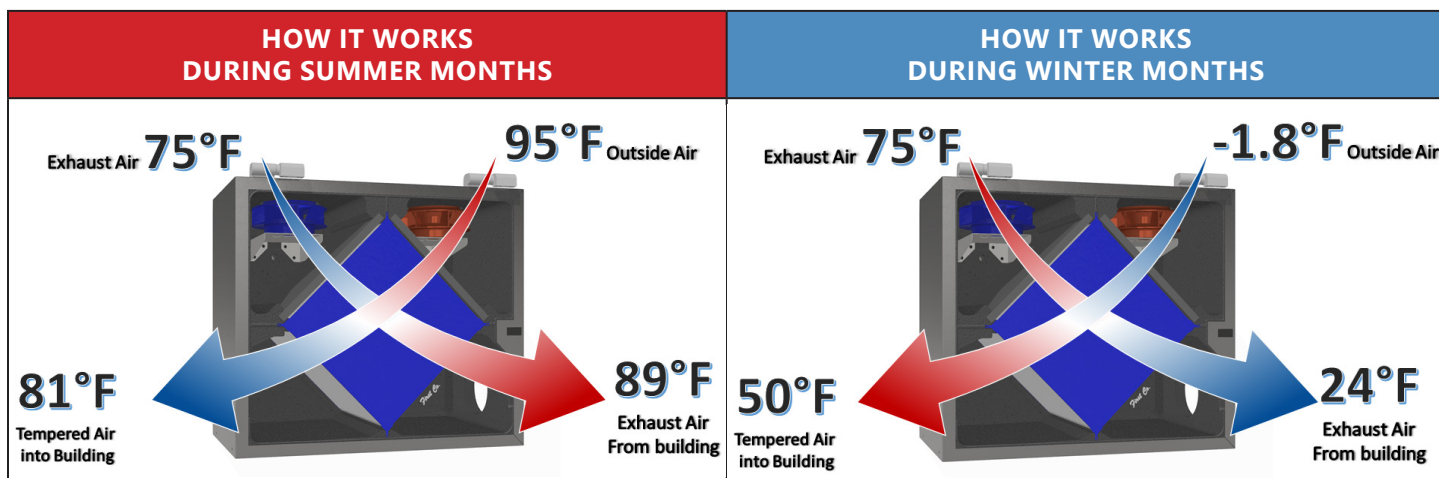
SPACE CONSTRAINED VERTICAL UNIT

WHAT IS ERV ?

ENERGY RECOVERY VENTILATOR (ERV) is a device that uses waste/stale air to precondition incoming outside/fresh air for ventilation.

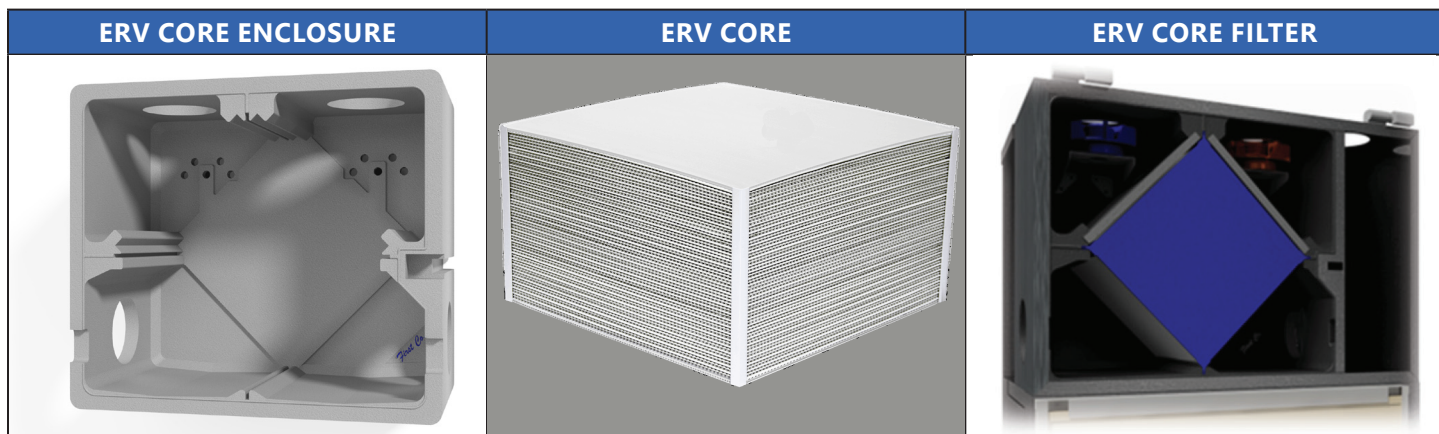
ERV uses a polymer core to transfer temperature (sensible energy) and moisture (latent energy) from waste air to incoming ventilation air. It will cool the air in the warmer months and warm the air in the colder months.

Tighter construction requirements create less natural ventilation, the **ERV** offers the solution with balanced ventilation.



INTEGRATED ENERGY RECOVERY VENTILATOR (ERV)

- **Core Enclosure:** Insulated one piece molded enclosure, made from mold/mildew resistant material. Completely sealed providing noise and air leakage reduction
- **Core:** Full enthalpy core made from polymer material that is removable for servicing & cleaning
- **Core Filters:** Filtration of ventilation air & return air with MERV 5 washable and disposable filters



DEFROST – The ERV will sense when the exhaust drops below the set temperature and will activate the built-in multi-stage defrost mode. The first stage will reduce the fan speed to help warm up the core and prevent freezing. The second stage will, if optioned, activate a 3rd party field installed electric preheater.

The ERV will cycle between defrost and normal operation until the temperature rises to the set point. It can be field configured so the supply fan can be switched off while the exhaust runs to warm up the core.





FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

ERV SENSORS

FIELD PROVIDED

- Humidity: Measures temperature and air humidity, signals ERV board to bring on ventilation
- Carbon Dioxide (CO2): Used for determining ventilation air supplied to maintain acceptable levels of CO2 in the space

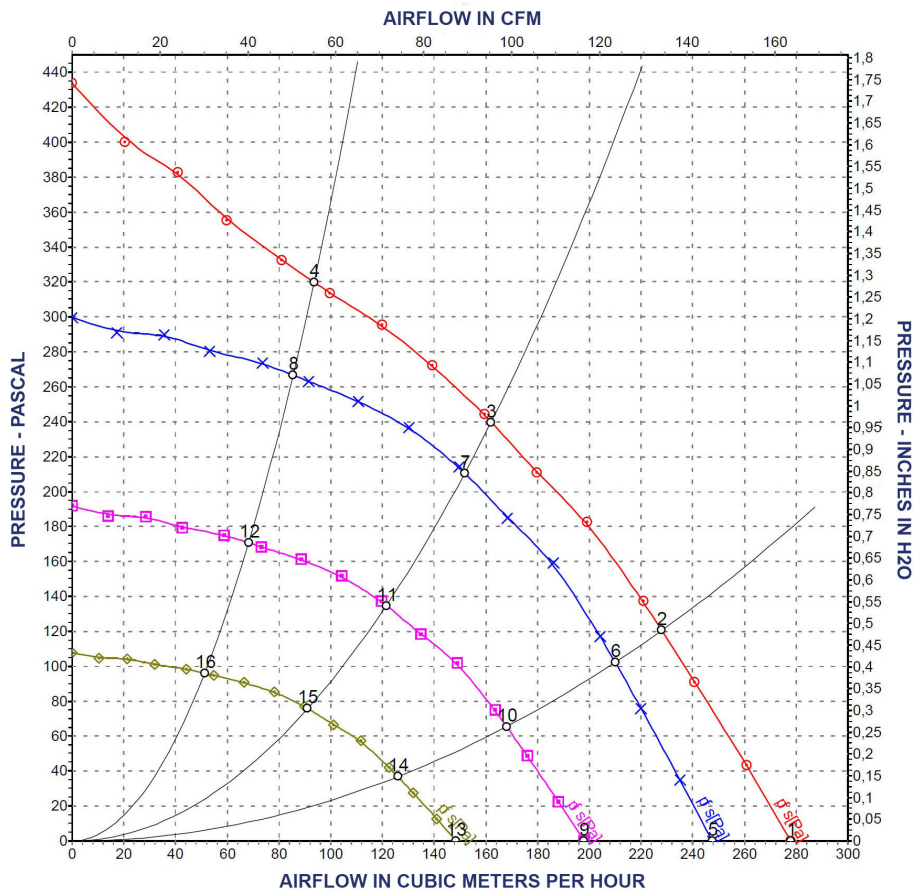
| BRAND | DESCRIPTION | PART NUMBER | IMAGE |
|-----------|--|-------------|---|
| Honeywell | Carbon Dioxide (CO2) Sensor Duct mounted no display | C7232 |  |
| Honeywell | Carbon Dioxide (CO2) Sensor wall mounted sensor with LED light display | C7233 |  |
| PCE | Humidity Sensor wall mounted 4 – 20 mA output | PCE-P18 |  |
| Honeywell | Humidistat wall mounted HumidiPRO Digital Humidity Control | H6062 |  |

FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

ERV FAN PERFORMANCE

ERV FAN CURVE – AIR FLOW AT 60HZ

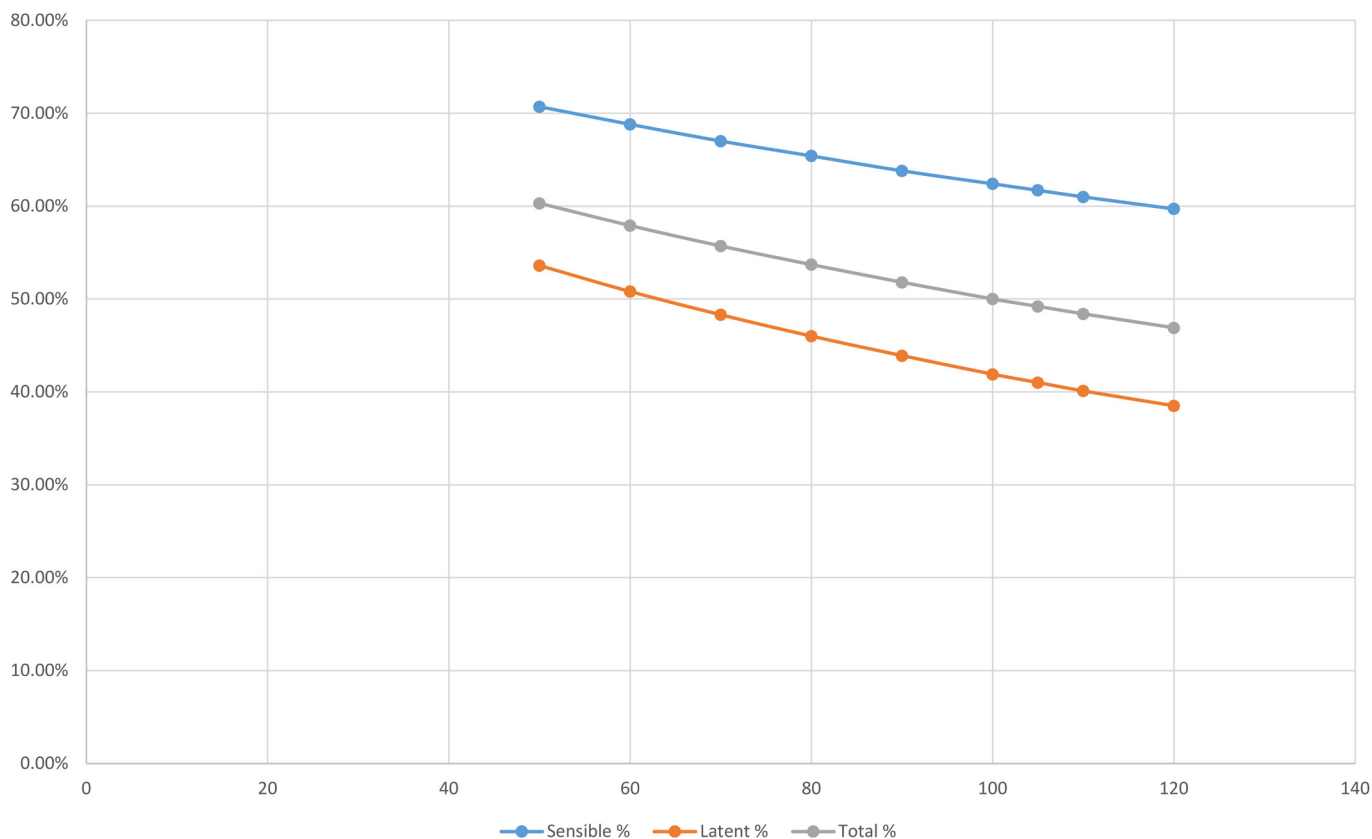


| | VOLTAGE | FREQUENCY HZ | SPEED (REV/MIN) | POWER (WATTS) | CURRENT (AMPS) | AIRFLOW (M ³ /H) | PRESSURE (PA) | AIRFLOW (CFM) | PRESSURE (IN H2O) |
|----|---------|-----------------|--------------------|------------------|-------------------|--------------------------------|------------------|------------------|----------------------|
| 1 | 230 | 60 | 3930 | 24 | 0.23 | 280 | 0 | 165 | 0.00 |
| 2 | 230 | 60 | 3800 | 26 | 0.26 | 230 | 120 | 136 | 0.48 |
| 3 | 230 | 60 | 3770 | 27 | 0.27 | 160 | 240 | 95 | 0.96 |
| 4 | 230 | 60 | 3835 | 26 | 0.25 | 95 | 320 | 56 | 1.28 |
| 5 | 230 | 60 | 3500 | 17 | 0.16 | 250 | 0 | 148 | 0.00 |
| 6 | 230 | 60 | 3500 | 20 | 0.2 | 210 | 102 | 124 | 0.41 |
| 7 | 230 | 60 | 3500 | 22 | 0.22 | 150 | 211 | 89 | 0.85 |
| 8 | 230 | 60 | 3500 | 19 | 0.19 | 85 | 267 | 51 | 1.07 |
| 9 | 230 | 60 | 2800 | 8.5 | 0.08 | 200 | 0 | 118 | 0.00 |
| 10 | 230 | 60 | 2800 | 10 | 0.1 | 170 | 66 | 101 | 0.26 |
| 11 | 230 | 60 | 2800 | 11 | 0.11 | 120 | 135 | 71 | 0.54 |
| 12 | 230 | 60 | 2800 | 9.9 | 0.1 | 70 | 171 | 42 | 0.69 |
| 13 | 230 | 60 | 2100 | 3.6 | 0.04 | 150 | 0 | 89 | 0.00 |
| 14 | 230 | 60 | 2100 | 4.4 | 0.04 | 125 | 37 | 74 | 0.15 |
| 15 | 230 | 60 | 2100 | 4.8 | 0.05 | 90 | 76 | 53 | 0.31 |
| 16 | 230 | 60 | 2100 | 4.2 | 0.04 | 50 | 96 | 30 | 0.39 |

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SPACE CONSTRAINED VERTICAL UNIT

ERV FAN PERFORMANCE SUMMER



| OUTDOOR | | RETURN | |
|---------|-------|--------|--------|
| db | rh | db | rh |
| 95 | 46.5% | 75 | 51.17% |

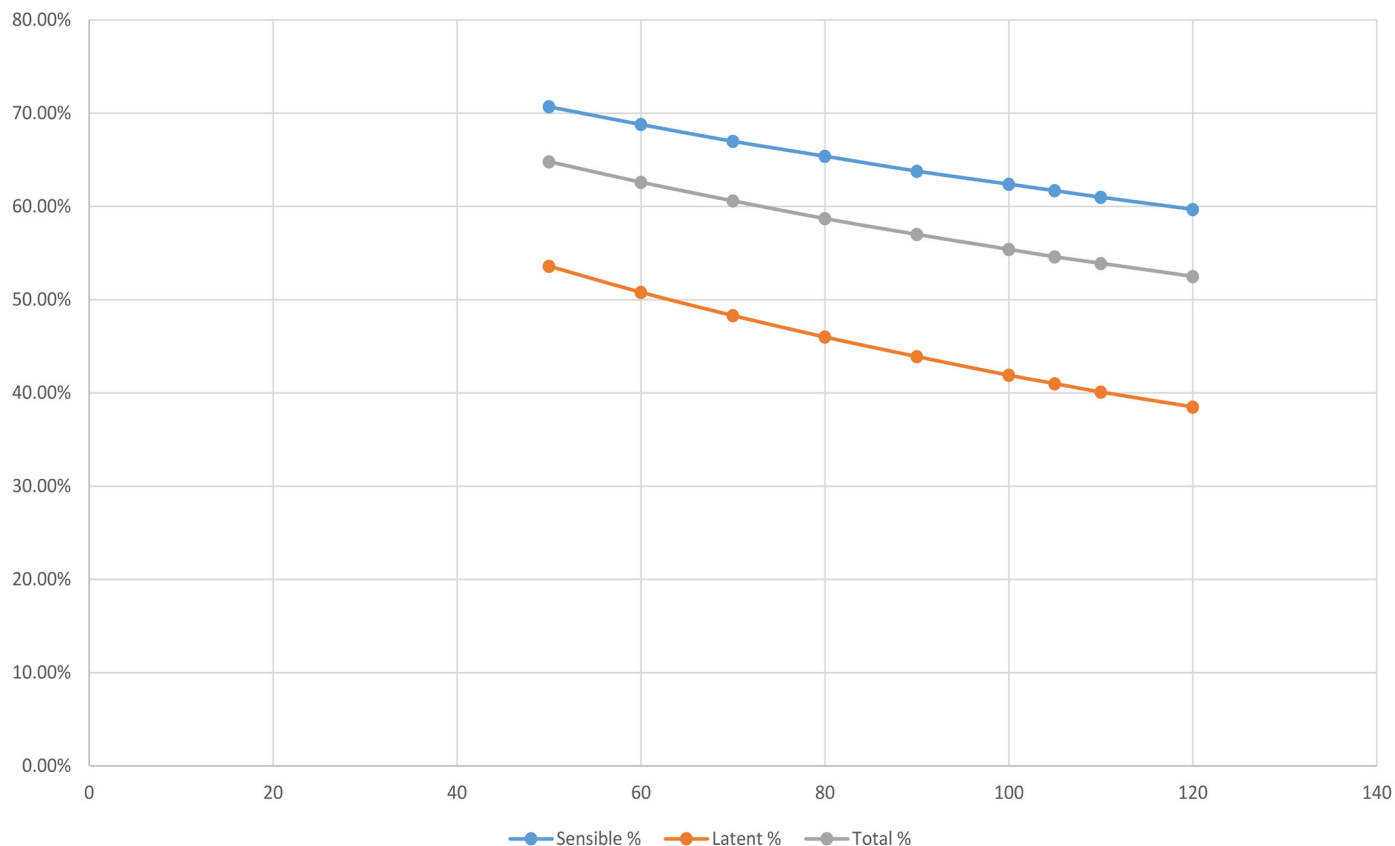


| CFM | SENSIBLE % | LATENT % | TOTAL % |
|-----|------------|----------|---------|
| 50 | 70.70% | 53.60% | 60.30% |
| 60 | 68.80% | 50.80% | 57.90% |
| 70 | 67.00% | 48.30% | 55.70% |
| 80 | 65.40% | 46.00% | 53.70% |
| 90 | 63.80% | 43.90% | 51.80% |
| 100 | 62.40% | 41.90% | 50.00% |
| 105 | 61.70% | 41.00% | 49.20% |
| 110 | 61.00% | 40.10% | 48.40% |
| 120 | 59.70% | 38.50% | 46.90% |

FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

ERV FAN PERFORMANCE WINTER



| OUTDOOR | | RETURN | |
|---------|--------|--------|--------|
| db | rh | db | rh |
| 35 | 81.69% | 70 | 47.88% |



| CFM | SENSIBLE % | LATENT % | TOTAL % |
|-----|------------|----------|---------|
| 50 | 70.70% | 53.60% | 64.80% |
| 60 | 68.80% | 50.80% | 62.60% |
| 70 | 67.00% | 48.30% | 60.60% |
| 80 | 65.40% | 46.00% | 58.70% |
| 90 | 63.80% | 43.90% | 57.00% |
| 100 | 62.40% | 41.90% | 55.40% |
| 105 | 61.70% | 41.00% | 54.60% |
| 110 | 61.00% | 40.10% | 53.90% |
| 120 | 59.70% | 38.50% | 52.50% |

FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

REQUIRED ACCESSORIES

WALL SLEEVE, LOUVER AND THERMOSTAT ARE REQUIRED FOR EACH INSTALLATION

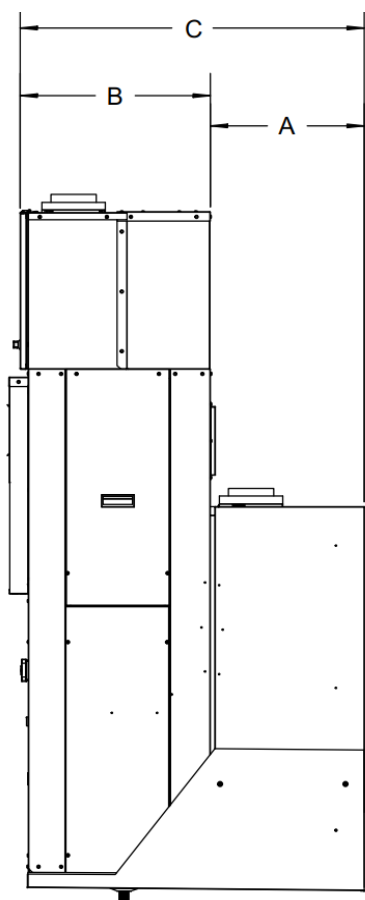
WALL SLEEVES

- Fresh air intake and exhaust ports are built in to wall sleeve
- Provided for installation during rough-in or when ready the unit is slid into the wall sleeve and ductwork and electrical are connected.
- Weight bearing wall sleeve that supports the entire weight of the unit and provides a weather tight seal against wind and water infiltration
- Four wall sleeve depths are available to accommodate wall thickness from 5" to 20".
- Includes a weather guard to cover the sleeve opening and a debris guard to cover wall sleeve base and drain during construction

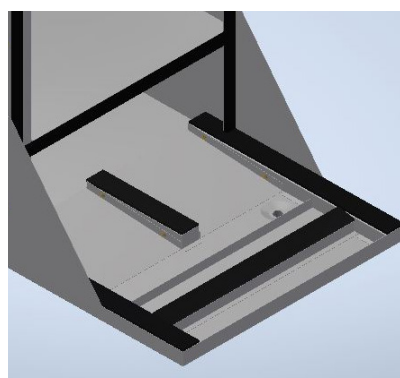
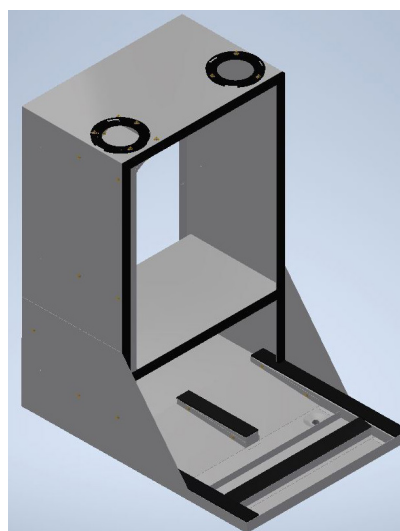
| ACCESSORY | DESCRIPTION | DIMENSIONS (H X W X D) | PART # | A | B | C |
|--------------------------------------|---------------------------|---------------------------|-----------|---------|-----------|-----------|
| FRESH-PAK INTEGRATED TOP PORTS | For 5" - 8" thick walls | 43-1/4 x 26-1/2 x 37-1/4 | 999-21B-E | 16-3/4" | 20-15/16" | 37-11/16" |
| | For 8" - 12" thick walls | 43-1/4 x 26-1/2 x 41-1/4 | 999-22B-E | 20-3/4" | 20-15/16" | 41-11/16" |
| | For 12" - 15" thick walls | 43-1/4 x 26-1/2 x 44-1/4 | 999-23B-E | 23-3/4" | 20-15/16" | 44-11/16" |
| | For 15" - 20" thick walls | 43-1/4 x 26-1/2 x 50-1/4 | 999-24B-E | 29-3/4" | 20-15/16" | 50-11/16" |

All wall sleeves are shipped two (2) per carton, fully assembled.

Wall sleeve, louver and thermostat are required for each installation.



**WALL SLEEVE
WITH TOP PORTS**



WALL SLEEVE CONDENSATE DRAIN

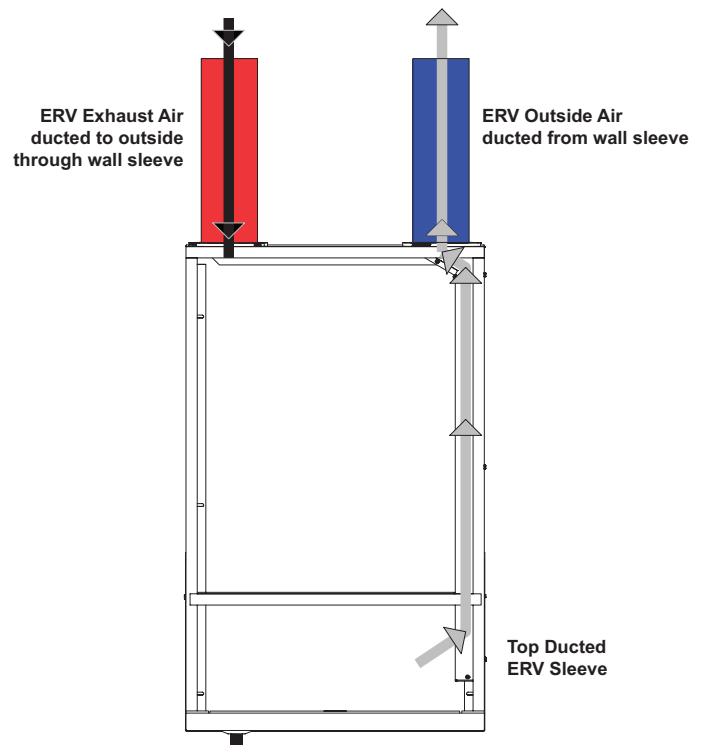
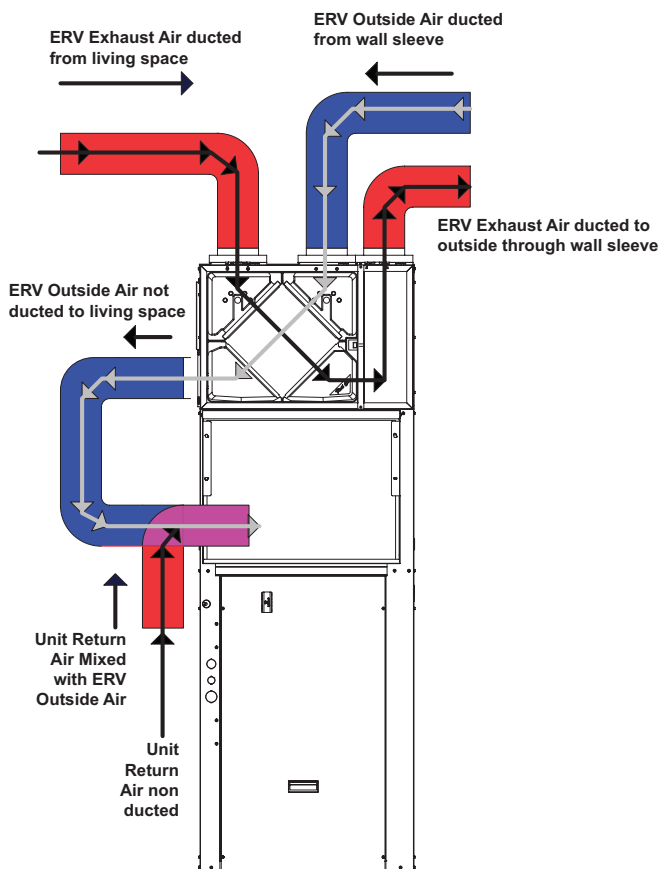
FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

WALL SLEEVE ERV DUCTING



Top Ducted Installation

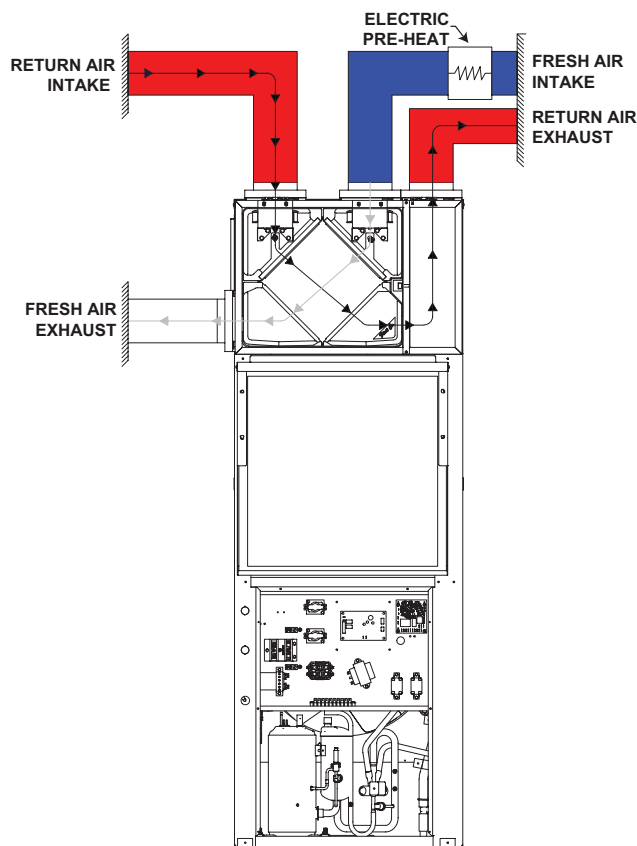


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SPACE CONSTRAINED VERTICAL UNIT

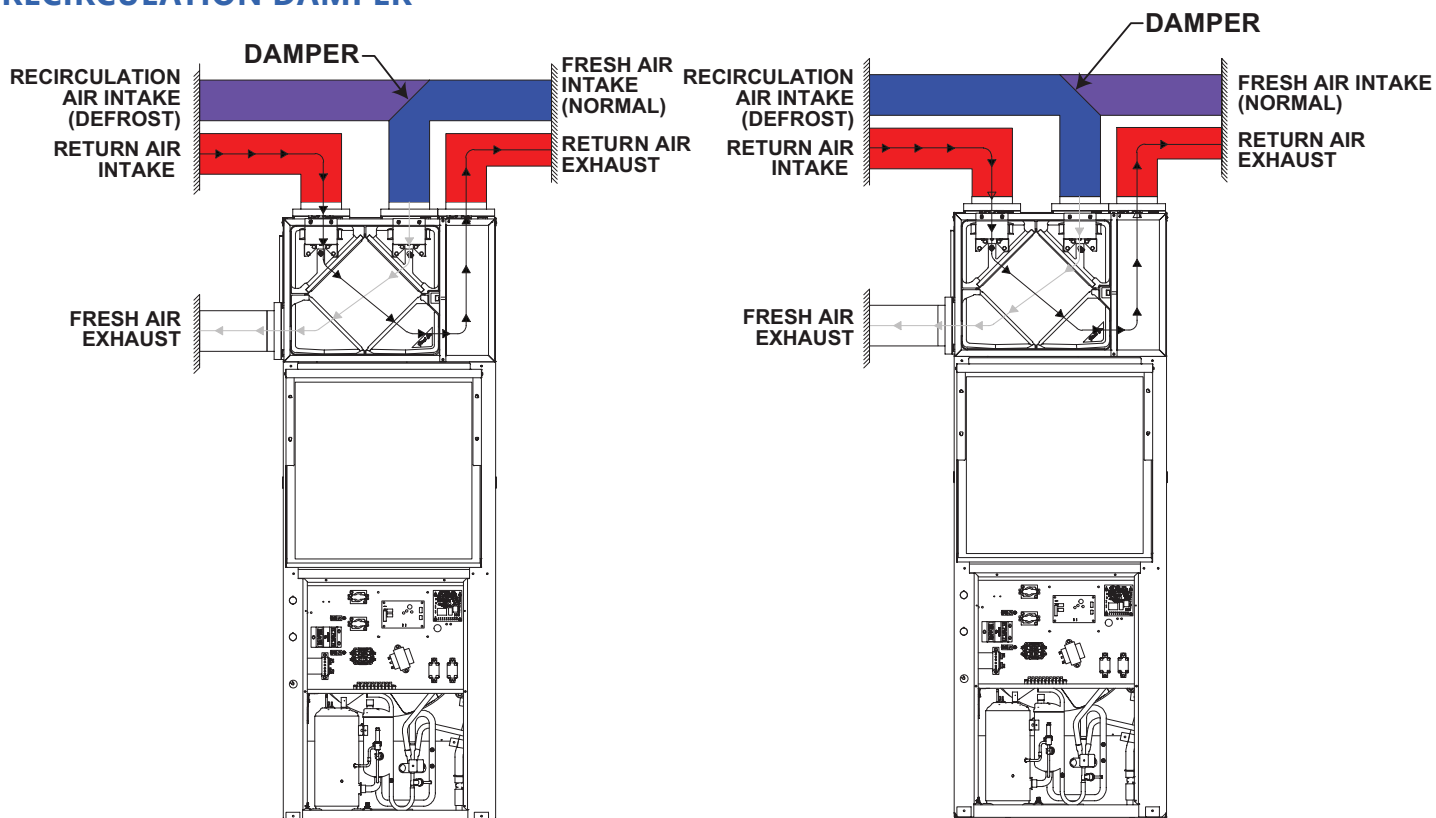
OPTION 1

ELECTRIC PREHEAT



OPTION 2

RECIRCULATION DAMPER



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SPACE CONSTRAINED VERTICAL UNIT

LOUVERS

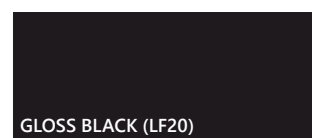
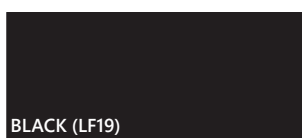
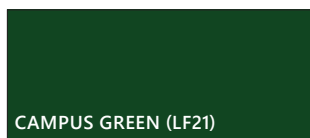
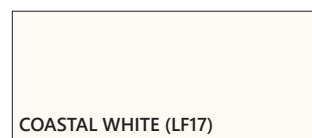
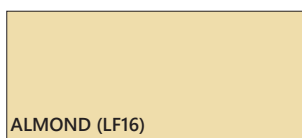
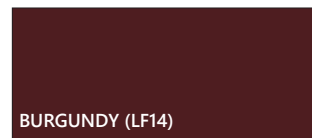
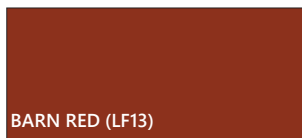
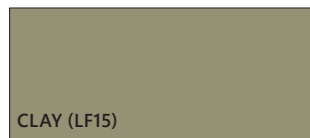
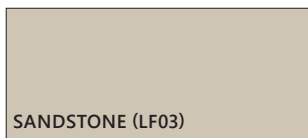
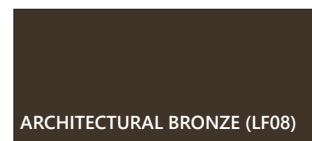
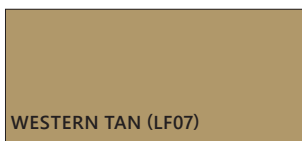
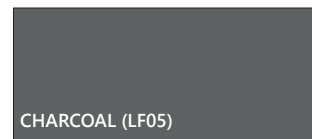
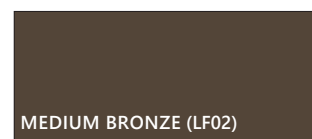
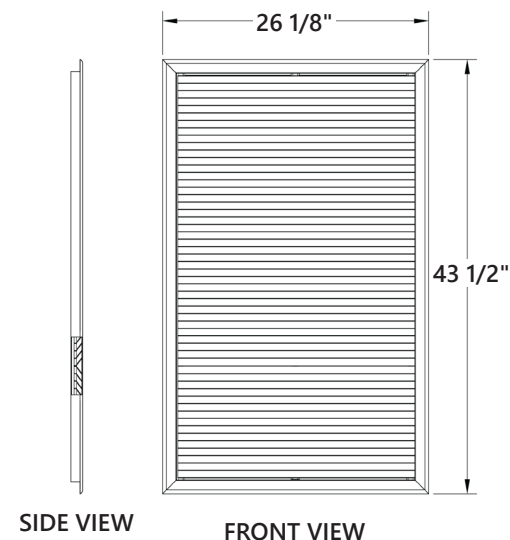
Extruded aluminum louver that attaches to the outside face of the wall sleeve. The blades of this unique louver recess into the wall sleeve for a neat, flush appearance.

Louver attachment screws are tightened from inside of the wall sleeve. Do not install the unit into the wall sleeve before installing the louver and tightening attachment screws.

| DESCRIPTION | DIMENSIONS (H X W X D) | PART NUMBER |
|---------------------|------------------------|-------------|
| Field Painted | 43-1/2 x 26-1/8 | G8502PPA |
| Anodized Clear Coat | 43-1/2 x 26-1/8 | G8501A |
| Custom Painted | 43-1/2 x 26-1/8 | G8503S* |

S* indicates custom color, to be provided by customer. Minimum order quantity is 15 per color, if less than 15 set up fees will be applied

STANDARD PAINT COLORS:





FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

CONTROLS

THERMOSTATS

Units are controlled by a standard low voltage thermostat. Thermostats with ventilation controls recommended for optimal ERV performance.

| BRAND | DESCRIPTION | PART NUMBER | IMAGE |
|-----------|---|----------------|---|
| Honeywell | Programmable 7-day/5-2/5-1-1 3H/2C HP 2H/2C Conv. 24v Hardwired, C-wire only, Wi-Fi, w/ventilation control | TH6320WF2003 |  |
| Honeywell | Programmable 7-day/5-2/5-1-1 3H/2C HP 2H/2C Conv. 24v Hardwired, C-wire only, Wi-Fi, aux heat lockout w/ventilation control | THX321WFS2001W |  |

WLAN SERVICE STICK

ERV Programming via WLAN* service stick - Must purchase one stick per project. Required to program ERV board through the ABT GO app.

| PART NUMBER | IMAGE |
|-------------|--|
| USB-300 |  |

*WLAN = wireless local area network

NOTE: Only required on Standard Controls package. Simplified Controls package can be programmed without a service stick.

FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

OPTIONAL ACCESSORIES

ACCESS PANELS

| COMPONENT | DESCRIPTION | FRAME (A x C) | OPENING (B x D) | PART NUMBER | SHIPPING WEIGHT LBS. |
|------------------|-------------|------------------|--------------------|----------------|-------------------------|
| RETURN AIR PANEL | LOUVERED | 87 X 37 | 84 X 34 | 931-20 | 55 |
| ACCESS PANEL | SOLID | 87 X 37 | 84 X 34 | 931-16 | 55 |

NOTE:

No filter provided, requires unit mounted filter.

Both panels are insulated for sound reduction and have tamperproof screws.

Panels are shipped ten per carton.

A solid door or panel with a side wall return air grille will result in lower sound levels.



Return Air Panel

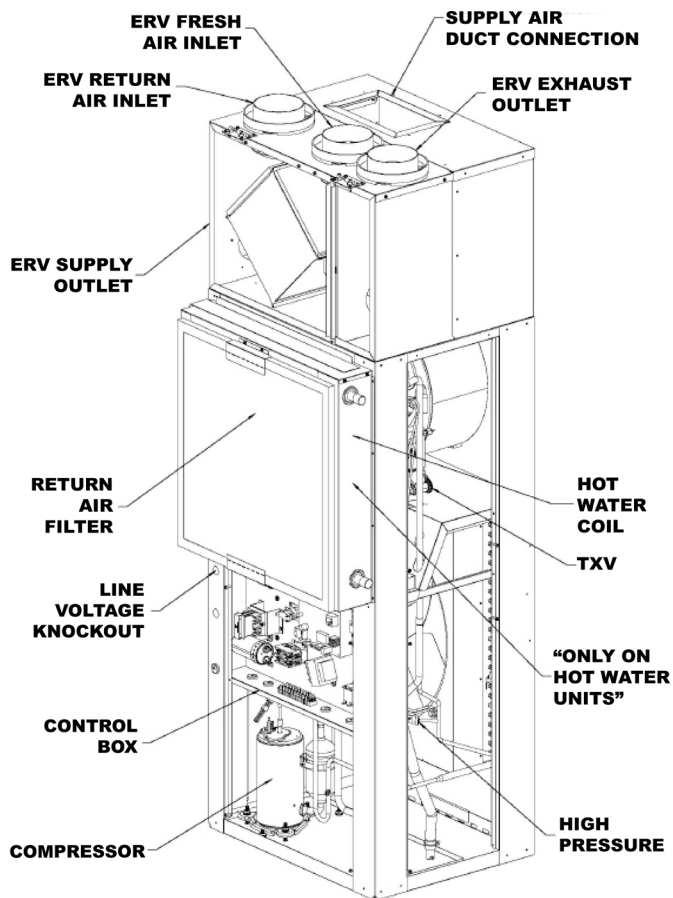


Access Panel

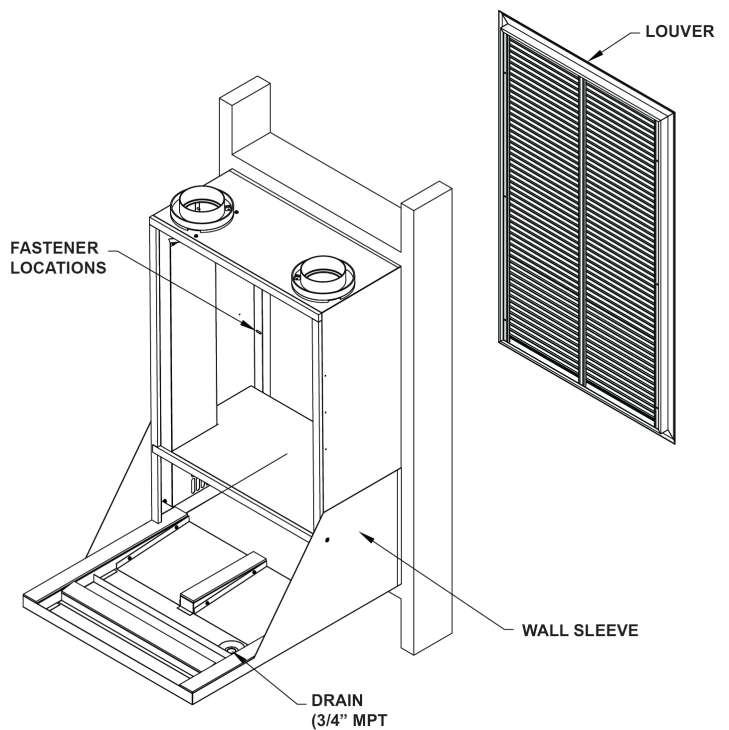
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SPACE CONSTRAINED VERTICAL UNIT

GENERAL ASSEMBLY AND MAJOR COMPONENTS



Major Components

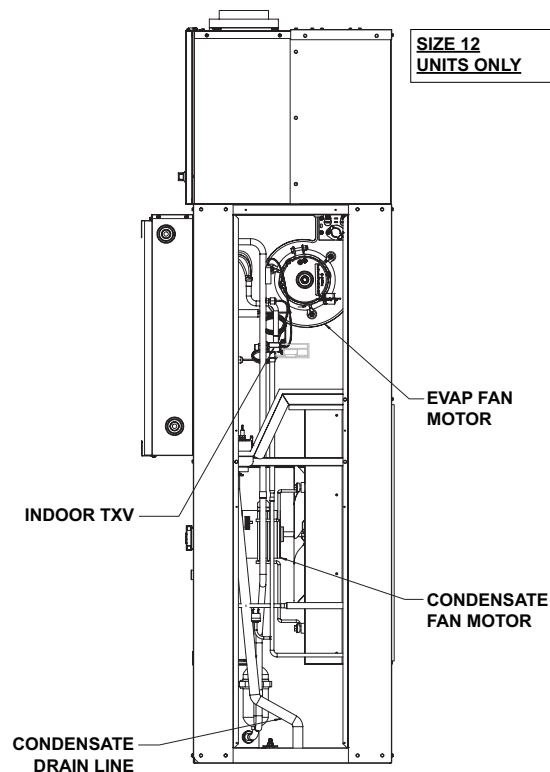
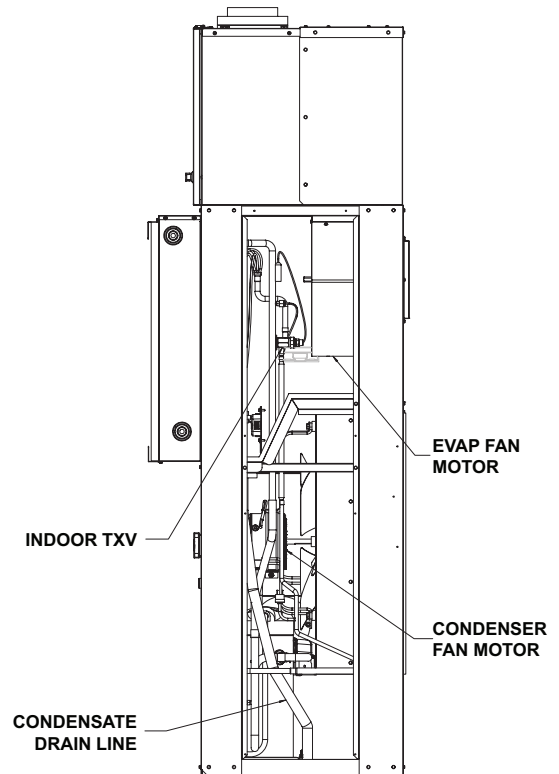
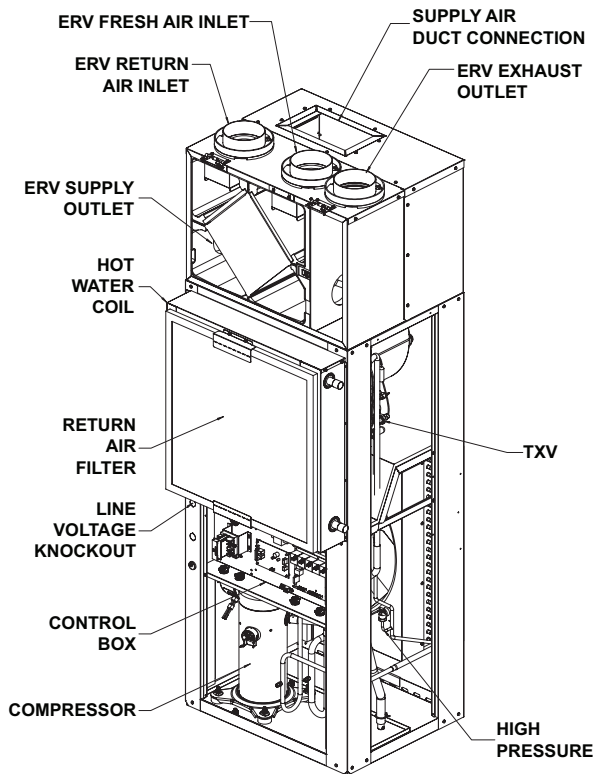


General assembly for wall sleeve and louver

FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

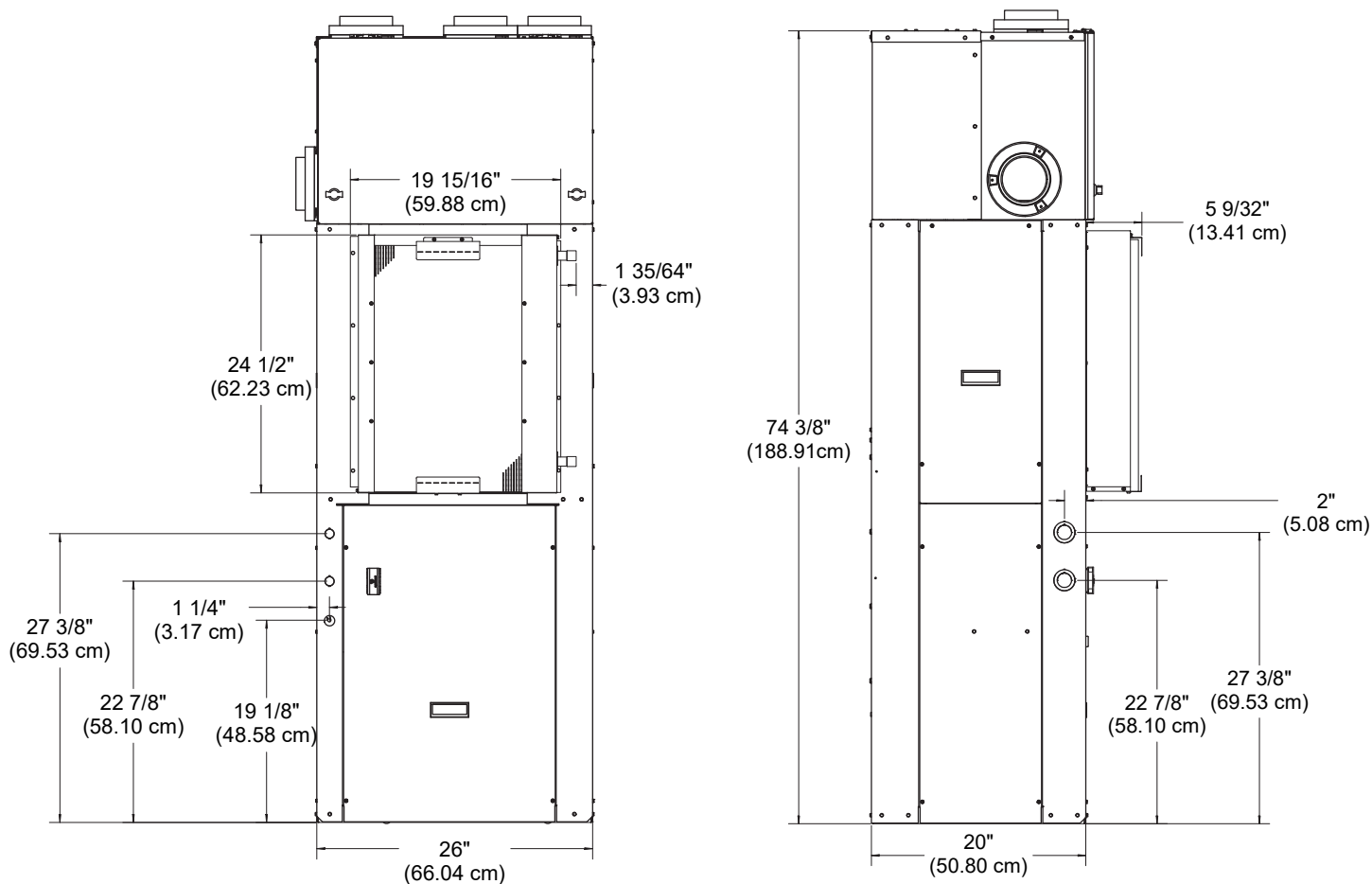
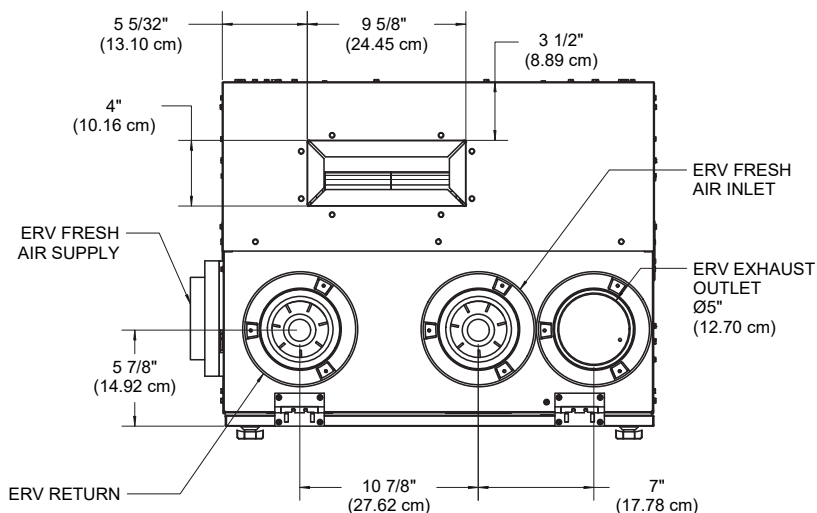
SIMPLIFIED CONTROL – MAJOR COMPONENTS



HYDRONIC HEAT

| PHYSICAL DATA | | | | | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| 454B FRESH PAK AC | | EFW12 | EFW18 | EFW24 | EFW30 |
| Compressor (Quantity) | | Rotary (1) | | Scroll (1) | |
| Compressor FLA | | 4.6 | 7.6 | 9 | 12.8 |
| Factory Charge (R454B) | lb | 3.13 | 4.2 | 4.5 | 4.675 |
| | kg | 1.41 | 1.9 | 2.04 | 2.12 |
| Minimum Room Area | m ² | 4.3 | 5.7 | 6.2 | 6.4 |
| Minimum Room Area | Ft ² | 45.8 | 61.8 | 66.3 | 68.9 |
| Minimum Air Flow | CFM | 84 | 113 | 122 | 126 |
| | M3/hr | 143 | 193 | 207 | 215 |
| ID MOTOR | | | | | |
| Motor (Quantity) | | 1 | 1 | 1 | 1 |
| Fan Motor Type | | ECM | ECM | ECM | ECM |
| Motor HP | | 1/4 | 1/3 | 1/3 | 1/2 |
| Motor FLA | | 2.3 | 2.8 | 2.8 | 4.1 |
| OD MOTOR | | | | | |
| Motor (Quantity) | | 1 | 1 | 1 | 1 |
| Fan Motor Type | | ECM | ECM | ECM | ECM |
| Motor HP | | 1/4 | 1/3 | 1/3 | 1/3 |
| Motor FLA | | 2.3 | 2.8 | 2.8 | 2.8 |
| ID BLOWER | | | | | |
| Blowers (Quantity) | | 1 | 1 | 1 | 1 |
| Blower Wheel Size (D x W) in. [cm] | | 6 x 8 | 10 x 4 | 10 x 4 | 10 x 4 |
| | | [15.24 x 20.32] | [25.4 x 10.16] | [25.4 x 10.16] | [25.4 x 10.16] |
| EVAPORATOR COIL | | | | | |
| Dimensions (H x W) in. [cm] | | 24 x 16.25 | 24x22 | 24x22 | 24x22 |
| | | [61 x 41.275] | [61 x 55.88] | [61 x 55.88] | [61 x 55.88] |
| Face Area ft ² [m ²] | | 3.53 [0.33] | 3.53 [0.33] | 3.53 [0.33] | 3.53 [0.33] |
| Rows | | 3 | 4 | 4 | 4 |
| OD COIL | | | | | |
| Dimensions (H x W) in. [cm] | | 26 x 16.5 | 26 x 22.5 | 26 x 22.5 | 26 x 22.5 |
| | | [66 x 42] | [66 x 57] | [66 x 57] | [66 x 57] |
| Face Area ft ² [m ²] | | 3.0 [0.2772] | 4.1 [0.3762] | 4.1 [0.3762] | 4.1 [0.3762] |
| MISCELLANEOUS | | | | | |
| Throwaway Filter Dim. in. [cm] | | 24 x 24 | 24 x 24 | 24 x 24 | 24 x 24 |
| | | [60.96 x 60.96] | [60.96 x 60.96] | [60.96 x 60.96] | [60.96 x 60.96] |
| Throwaway Filter Quantity | | 1 | 1 | 1 | 1 |
| A2L MITIGATION | | NO | YES | YES | YES |
| Operating Weight lb. [oz] | | 270 [122.5] | 285 [129.3] | 300 [136] | 305 [138.3] |
| Packaged Weight lb. [oz] | | 290 [131.5] | 305 [138.3] | 320 [145.1] | 325 [147.4] |

UNIT DIMENSIONS 12K



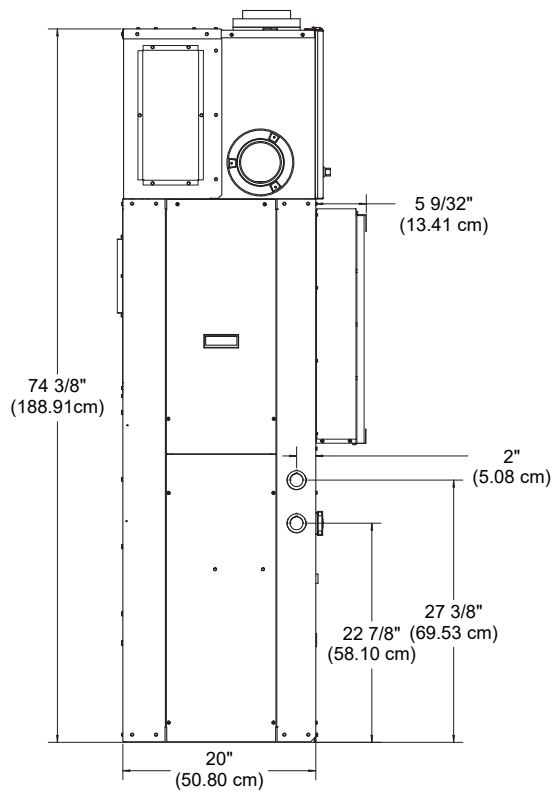
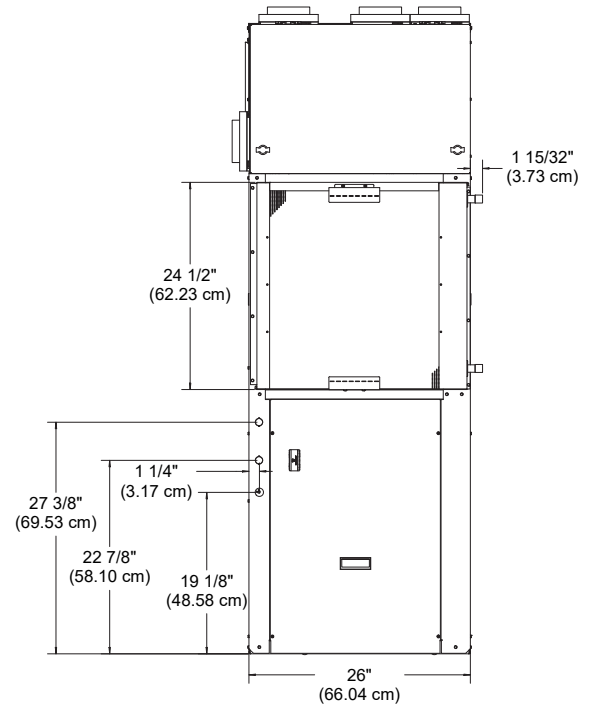
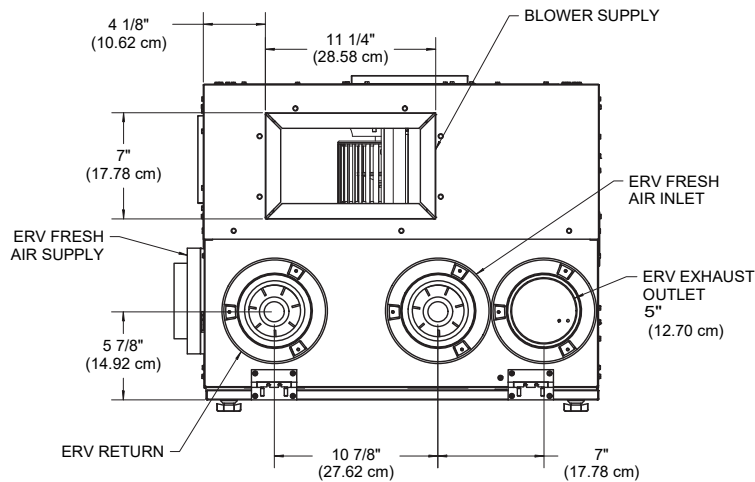
FRESH-PAK HW

SPACE CONSTRAINED VERTICAL UNIT

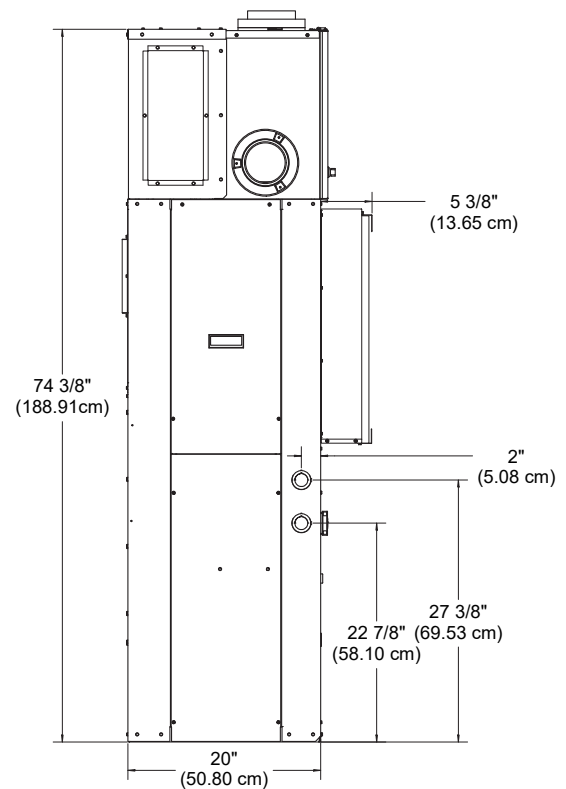
EFW

PHYSICAL DATA

UNIT DIMENSIONS 18-30K

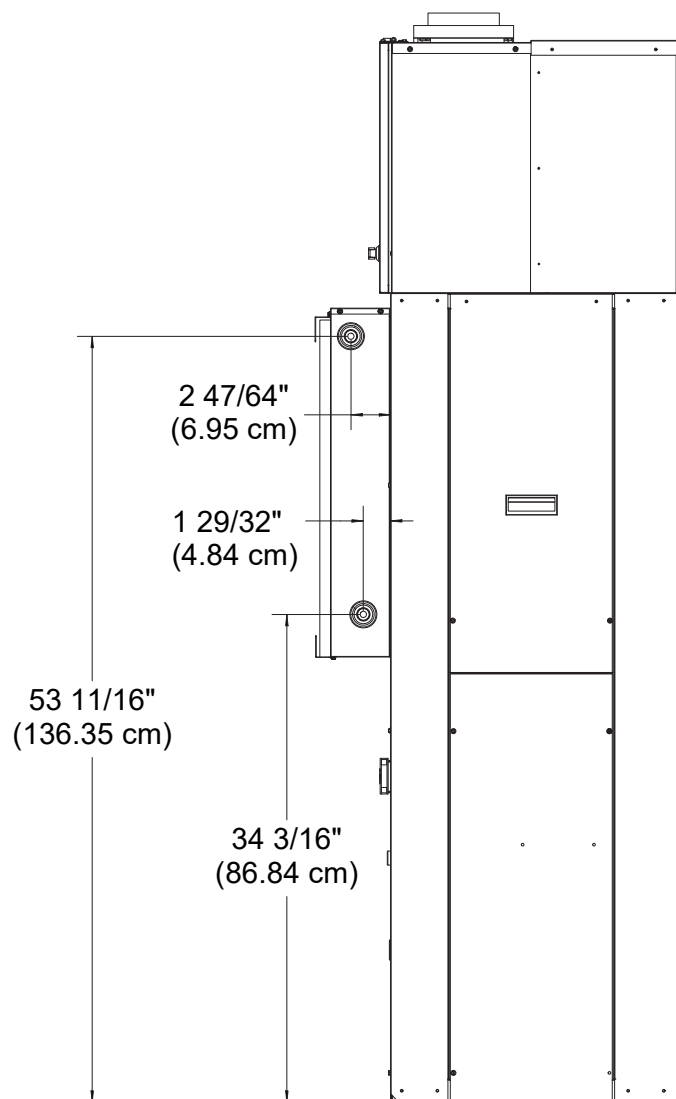


18-30K HW 2R

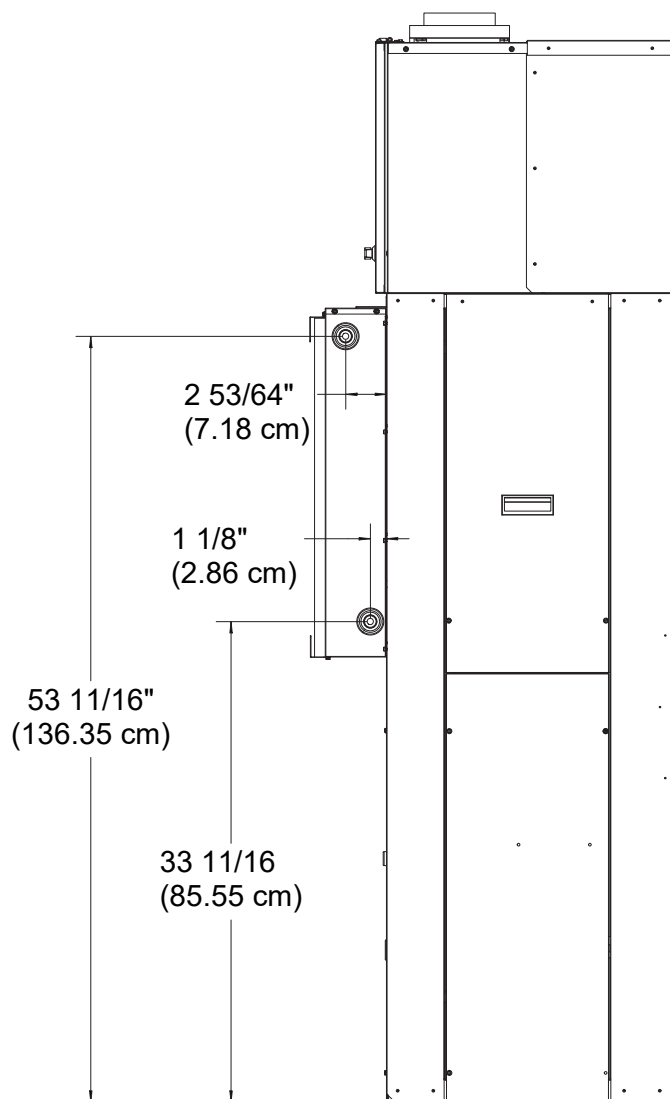


18-30K HW 3R

HOT WATER OUTLETS 12K-30K



HW 2R



HW 3R

ELECTRICAL DATA

| COOLING WITH HOT WATER HEAT | | | | | | | | | | | |
|-----------------------------|--------------|------------|-----|---------------|-----|--------------|-----|-----------------------------|------|-----------------------------------|------|
| MODEL NUMBER | VOLTAGE | COMPRESSOR | | OUTDOOR MOTOR | | INDOOR MOTOR | | MIN. CIRCUIT AMPACITY (MCA) | | MAX. OVERCURRENT PROTECTION (MOP) | |
| | | RLA | LRA | FLA | HP | FLA | HP | (L1-L2) | | (L1-L2) | |
| | | | | | | | | 240V | 208V | 240V | 208V |
| EFW1222RD0D* | 208/230-1-60 | 4.6 | 25 | 2.3 | 1/4 | 2.3 | 1/4 | 12.0 | 12.0 | 15 | 15 |
| EFW1822RD0D* | 208/230-1-60 | 7.6 | 36 | 2.8 | 1/3 | 2.8 | 1/3 | 17.0 | 17.0 | 20 | 20 |
| EFW1823RD0D* | 208/230-1-60 | 7.6 | 36 | 2.8 | 1/3 | 2.8 | 1/3 | 17.0 | 17.0 | 20 | 20 |
| EFW2422RD0D* | 208/230-1-60 | 9 | 63 | 2.8 | 1/3 | 2.8 | 1/3 | 19.0 | 19.0 | 25 | 25 |
| EFW2423RD0D* | 208/230-1-60 | 9 | 63 | 2.8 | 1/3 | 2.8 | 1/3 | 19.0 | 19.0 | 25 | 25 |
| EFW3022RD0D* | 208/230-1-60 | 12.8 | 77 | 2.8 | 1/3 | 4.1 | 1/2 | 25.0 | 25.0 | 35 | 35 |
| EFW3023RD0D* | 208/230-1-60 | 12.8 | 77 | 2.8 | 1/3 | 4.1 | 1/2 | 25.0 | 25.0 | 35 | 35 |

NOTE:

Refer to the wiring diagrams in the EFW IOM for additional details

Wire size should be determined in accordance with National Electric Codes

Unit are rated for 208/230V, but MOP,MCA values are calculated at 208/240V

| HOT WATER HEATING TABLE | | | | | | |
|-------------------------|---------------|-----|-----------------|------------------------------------|-------|-------|
| UNIT MODEL | AIRFLOW (CFM) | GPM | P.D. (Ft. Wtr.) | MBTUH @ ENTERING WATER TEMPERATURE | | |
| | | | | 120.0 | 140.0 | 180.0 |
| EFW1222R | 400 | 1 | 0.3 | 10.6 | 15.0 | 24.2 |
| | | 1.5 | 0.7 | 12.2 | 17.3 | 27.5 |
| | | 2 | 1.2 | 13.2 | 18.6 | 29.5 |
| EFW1822R | 600 | 2 | 1.3 | 18.0 | 25.4 | 40.3 |
| | | 2.5 | 2 | 19.1 | 26.9 | 42.7 |
| | | 3 | 2.8 | 19.9 | 28.0 | 44.4 |
| EFW1823R | 600 | 2 | 1.2 | 20.8 | 29.3 | 46.4 |
| | | 2.5 | 1.8 | 22.3 | 31.3 | 49.5 |
| | | 3 | 2.5 | 23.3 | 32.7 | 51.7 |
| EFW2422R | 800 | 2 | 1.4 | 20.9 | 29.5 | 46.9 |
| | | 2.5 | 2 | 22.5 | 31.7 | 50.3 |
| | | 3 | 2.8 | 23.6 | 33.3 | 52.8 |
| EFW2423R | 800 | 2 | 1.2 | 24.3 | 34.2 | 54.1 |
| | | 2.5 | 1.8 | 26.3 | 37.0 | 58.6 |
| | | 3 | 2.5 | 27.8 | 39.2 | 62.0 |
| EFW3022R | 950 | 2 | 1.4 | 23.4 | 32.7 | 52.0 |
| | | 2.5 | 2 | 25.2 | 35.5 | 56.4 |
| | | 3 | 2.8 | 26.7 | 37.6 | 59.7 |
| EFW3023R | 950 | 2 | 1.2 | 26.8 | 37.8 | 59.9 |
| | | 2.5 | 1.8 | 29.5 | 41.6 | 65.8 |
| | | 3 | 2.5 | 31.5 | 44.4 | 70.3 |

COOLING PERFORMANCE

| EFW – EXTENDED COOLING PERFORMANCE | | | | | | | | | | | | | | | | | | | |
|------------------------------------|-------------------|-----------------------|------|------|------------------|------|------|------------------|------|------|------------------|------|------|------------------|------|------|------------------|------|------|
| Model | Indoor Temp DB/WB | Outdoor Temperature°F | | | | | | | | | | | | | | | | | |
| | | 65.0°F | | | 75.0°F | | | 85.0°F | | | 95.0°F | | | 105.0°F | | | 115.0°F | | |
| | | B T U H | S/T | KW | B T U H | S/T | KW | B T U H | S/T | KW | B T U H | S/T | KW | B T U H | S/T | KW | B T U H | S/T | KW |
| EFW12 | 75/57 | 11850 | 1.00 | 0.76 | 11500 | 1.00 | 0.86 | 10700 | 1.00 | 0.98 | 10100 | 1.00 | 1.06 | 9650 | 1.00 | 1.20 | 9100 | 1.00 | 1.36 |
| | 75/63 | 12900 | 0.75 | 0.76 | 12250 | 0.76 | 0.86 | 11650 | 0.78 | 0.96 | 10900 | 0.79 | 1.04 | 10300 | 0.82 | 1.18 | 9650 | 0.84 | 1.36 |
| | 80/67 | 13800 | 0.72 | 0.76 | 13150 | 0.74 | 0.86 | 12500 | 0.76 | 0.96 | 11700 | 0.77 | 1.04 | 11000 | 0.79 | 1.18 | 10300 | 0.82 | 1.36 |
| | 85/72 | 14950 | 0.65 | 0.76 | 14250 | 0.67 | 0.84 | 13550 | 0.69 | 0.96 | 12700 | 0.70 | 1.04 | 11950 | 0.71 | 1.18 | 11200 | 0.74 | 1.36 |
| EFW18 | 75/57 | 19000 | 1.00 | 1.32 | 18300 | 1.00 | 1.44 | 17150 | 1.00 | 1.58 | 15550 | 1.00 | 1.70 | 14800 | 1.00 | 1.88 | 14100 | 1.00 | 2.06 |
| | 75/63 | 20400 | 0.76 | 1.32 | 19400 | 0.77 | 1.44 | 18450 | 0.79 | 1.56 | 16300 | 0.84 | 1.70 | 15400 | 0.86 | 1.86 | 14600 | 0.90 | 2.06 |
| | 80/67 | 21700 | 0.73 | 1.32 | 20750 | 0.75 | 1.42 | 19700 | 0.76 | 1.56 | 17450 | 0.81 | 1.70 | 16450 | 0.83 | 1.86 | 15550 | 0.87 | 2.06 |
| | 85/72 | 23500 | 0.66 | 1.30 | 22450 | 0.68 | 1.42 | 21350 | 0.69 | 1.56 | 18950 | 0.74 | 1.70 | 17850 | 0.76 | 1.86 | 16800 | 0.79 | 2.06 |
| EFW24 | 75/57 | 24450 | 1.00 | 1.76 | 23800 | 1.00 | 1.90 | 22300 | 1.00 | 2.08 | 15550 | 1.00 | 1.70 | 14800 | 1.00 | 1.88 | 14100 | 1.00 | 2.06 |
| | 75/63 | 26450 | 0.75 | 1.76 | 25300 | 0.77 | 1.92 | 24050 | 0.78 | 2.08 | 22700 | 0.80 | 2.34 | 21550 | 0.82 | 2.56 | 20300 | 0.84 | 2.80 |
| | 80/67 | 28250 | 0.73 | 1.76 | 26900 | 0.73 | 1.92 | 25650 | 0.75 | 2.10 | 24150 | 0.77 | 2.34 | 22900 | 0.79 | 2.56 | 21650 | 0.81 | 2.80 |
| | 85/72 | 30450 | 0.65 | 1.76 | 29100 | 0.67 | 1.92 | 27700 | 0.68 | 2.10 | 26150 | 0.70 | 2.34 | 24750 | 0.72 | 2.58 | 23450 | 0.75 | 2.82 |
| EFW30 | 75/57 | 29100 | 1.00 | 2.26 | 28150 | 1.00 | 2.46 | 27400 | 1.00 | 2.68 | 25150 | 1.00 | 2.90 | 24250 | 1.00 | 3.16 | 23200 | 1.00 | 3.46 |
| | 75/63 | 31900 | 0.73 | 2.30 | 30600 | 0.74 | 2.50 | 29200 | 0.75 | 2.72 | 27150 | 0.77 | 2.94 | 25900 | 0.79 | 3.2 | 24750 | 0.82 | 3.50 |
| | 80/67 | 33950 | 0.70 | 2.34 | 32550 | 0.72 | 2.52 | 31200 | 0.73 | 2.74 | 28950 | 0.75 | 2.96 | 27800 | 0.78 | 3.24 | 26200 | 0.79 | 3.52 |
| | 85/72 | 36550 | 0.63 | 2.36 | 35050 | 0.65 | 2.56 | 33650 | 0.67 | 2.80 | 31350 | 0.69 | 3.02 | 29750 | 0.70 | 3.28 | 28300 | 0.72 | 3.58 |

Performance modeled at Rated Airflow, .3" in H₂O ESP



AMERICAN-MADE. FAMILY OWNED.



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