

Imperial Units



Introducing the <u>Leaf</u> *I* Vertical Stacked Fan Coil by Temspec

... the Highest efficiency stacked fan coil available

"PUTTING GREEN INTO HIGH RISE BUILDINGS"



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Temspec Leaf ≠ Fan-Coil Units

In a time when environmental responsibility has never been greater, it is our duty as an HVAC equipment manufacturer to design equipment with the lowest environmental impact. The Leaf unit is a result of more than a year of design and testing to produce the highest efficiency vertical stacked fan coil unit available today.

Our design criteria was quite simple; have the smallest footprint, the lowest fan wattage, the quietest operation, and all at no cost premium.

The new Leaf units were designed for customers looking to raise the bar on efficiency, reliability, longevity, and quiet operation. The Leaf unit is the most efficient vertical stacked fan coil on the market today. Typical applications are multiple floor apartments, office buildings, hotels, dormitories, long term care facilities and armed forces barracks.

The small footprint maximizes your leasable space, and the variable speed backward inclined ECM impeller fans offer the highest efficiency in the industry with fan energy savings of 70%.

Application flexibility

The Leaf product line offers 2-pipe change-over, 2-pipe with primary or auxiliary electric heat, and 4-pipe. 120 – 277 single phase AC power supply options are standard.

Control valve options include 2 & 3 way, 2 position, analog, and 6-way 2 position or analog.

The three cabinet sizes cover an airflow range of up to 400, 800 and 1200CFM.

The Leaf unit offers four cabinet configurations:

1/ Concealed Cabinet - 86" high, 20ga galvanized metal)

2/ Exposed Cabinet - 86" high, 18ga powder coated metal

3/ Compact ducted unit - 70" high, 20ga galvanized metal

4/ Integrated E/HRV concealed cabinet - 86" high, 20ga galvanized metal



Temspec Leaf Model Number

Digits 1, 2 - Finished Goods Identifier

Must always be "TL"

Digit 3 - Spacer

Digit 4 - Cabinet

G - concealed cabinet

Digit 5 - Outside Air

F - none

Digits 6,7 - Cabinet Footprint

04 - 15.75"W x 15.75"D 08 - 20"W x 18"D 12 - 24"W x 18"D

Digit 8 - Spacer

Digit 9,10 - Cabinet Height = 86

- Digit 11 M
- Digit 12 K
- Digit 13 Y

Digit 14 - Spacer

Digit 15 - Primary Cooling

- C Chilled Water (Single Purpose Coil)
- W Chilled Water (2-pipe Changeover Coil)
- Y No Cooling Coil

Digit 16 - Primary Heating

- H Hot Water (Single Purpose Coil)
- W Hot Water (2-pipe Changeover Coil)
- E Electric Resistance
- Y No Heating Coil

Digit 17 - Auxiliary Heat

- E Electric Resistance (NOT AVAILABLE ON 4 PIPE SYSTEM)
- Y None

Digit 18 - Spacer

Digit 19 - Nominal CFM / LS

- E 300 / 142
- G 400 / 188
- H 575 / 271, free blow (250mm fan in 08 cabinet)
- K 600 / 283
- M 800 / 378
- P 1000 / 472
- R 1200 / 566

Digit 20 - Unit Connected Voltage

- 1 120/1/60 Unfused Disconnect
- 2 208/1/60 Unfused Disconnect
- 3 240/1/60 Unfused Disconnect
- 4 277/1/60 Unfused Disconnect
- 5 120/1/60 Fused Disconnect
- 6 208/1/60 Fused Disconnect
- 7 240/1/60 Fused Disconnect
- 8 277/1/60 Fused Disconnect

Digit 21 - Motor Type

V - ECM Variable Speed

Digit 22 - Water Coils

Note: X/Y format, where X = Number of Cooling rows and Y = Number of Heating rows. All coils have aluminum fins, copper tubes and galvanized casing.

Y - No water coil (electric heat only)

3 Row Coils

- K 3/0 (2-pipe), 12 FPI
- L 3/1 (4-pipe), 12FPI
- M 3/2 (4-pipe), 12FPI
- N 3/0 (2-pipe), 14FPI
- P 3/1 (4-pipe), 14 FPI
- Q 3/2 (4-pipe), 14 FPI
- 4 Row Coils
 - U 4/0 (2-pipe), 12 FPI
 - V 4/1 (4-pipe), 12 FPI
 - W 4/0 (2-pipe), 14 FPI
 - Z 4/1 (4-pipe), 14 FPI

Digit 23 - Chilled Water Piping Packages

Note: Manual air vent, flexible braided hoses and shutoff valves are standard features on all options except 'Y'. Control valves are mounted on coil return.

- Y No piping package (hose adapters are included for testing at factory)
- A 2-way control valve, shutoff valves on supply and return
- B 3-way control valve, shutoff valves on supply and return
- C 2-way control valve, shutoff valve on supply, manual balancing valve with shutoff on return.
- D 3-way control valve, shutoff valve on supply, manual balancing valve with shutoff on return.
- E 2-way control valve, combo strainer/ shutoff valve on supply, manual balancing valve with shutoff on return
- F 3-way control valve, combo strainer/ shutoff valve on supply, manual balancing valve with shutoff on return
- G 2-way control valve, combo strainer/ shutoff valve on supply, automatic balancing valve with shutoff on return
- H 3-way control valve, combo strainer/ shutoff valve on supply, automatic balancing valve with shutoff on return

Digit 24 - Hot Water Piping Packages

Note: Manual air vent, flexible braided hoses and shutoff valves are standard features on all options except 'Y'. Control valves are mounted on coil return.

- Y No piping package (hose adapters are included for testing at factory)
- A 2-way control valve, shutoff valves on supply and return
- B 3-way control valve, shutoff valves on supply and return
- C 2-way control valve, shutoff valve on supply, manual balancing valve with shutoff on return.
- D 3-way control valve, shutoff valve on supply, manual balancing valve with shutoff on return.
- E 2-way control valve, combo strainer/ shutoff valve on supply, manual balancing valve with shutoff on return
- F 3-way control valve, combo strainer/ shutoff valve on supply, manual balancing valve with shutoff on return
- G 2-way control valve, combo strainer/ shutoff valve on supply, automatic balancing valve with shutoff on return
- H 3-way control valve, combo strainer/ shutoff valve on supply, automatic balancing valve with shutoff on return

Digit 25 - Electric Heat

Note: Must operate at supply voltage, subject to cabinet size and airflow. SSR for modulating control is considered a special option. Contact Temspec for pricing and lead time.

- Y No Electric Heat
- A 0.75 kW (Only available at 120V)
- B 1.0 kW
- C 1.5 kW
- D 2.0 kW (maximum size 120V)
- E 2.5 kW
- F 3.0 kW
- G 3.5 kW
- H 4.0 kW
- J 4.5 kW
- K 5.0kW
- L- 6.0kW
- M 7.0 kW
- N 8.0kW

Digit 26 - Control Interface

Note: (Provided and installed by factory unless otherwise noted) Note: standard thermostat is "J"

- O 0-10 vdc speed control, Thermostat or Controller by Others
- K 3 speed fan control, Thermostat or Controller by others
- C <u>Johnson Controls FCP-PA-701</u> 3 speed fan control, Manual Changeover, Programmable, NC 2-position valves
- E <u>Johnson Controls FCP-NA-701</u> 3 speed fan control, Manual Changeover, Non-Programmable, NC 2-position valves
- J <u>Spartan TE226</u> (Daikin Branded) 4 pipe or 2 pipe w/ electric heat fan coil options, 0-10 vdc speed control, Digital programmable auto changeover, on/auto fan speed, energy savings input, NO or NC 2-position valve control – Best option for humidity and temperature control
- Q <u>Spartan TE246</u> (Daikin Branded) 2 pipe w/out electric heat fan coil option, 0-10 vdc speed control, Digital programmable auto changeover, on/auto fan speed, energy savings input, NO or NC 2-position valve control – Best option for humidity and temperature control
- H <u>KMC MIT-FA-005</u> (Daikin Branded) 0-10 vdc speed control, Digital programmable *auto changeover*, on/auto fan speed, NO or NC modulating or 2 position valve control and BACnet
- M <u>KMC MIT-FA-005</u> (Daikin Branded) 0-10 vdc speed control, Digital programmable *manual changeover*, on/auto fan speed, NO or NC modulating or 2 position valve control and BACnet
- R <u>MBTek Apollo</u> 0-10VDC Fan Control, Manual Changeover, Programmable, NC 2-position valves, Wi-Fi Control with user app
- Z <u>Special</u> Select for option not listed above. Digit 30 must also be 'S'. Temspec must be consulted for any "Special" options before an order can be accepted.

Digit 27 - Cooling & Heating Valve Control

- Y None, installed by others
- C 2-pipe, Contractor supplied, factory installed
- L 4-pipe, Contractor supplied, factory installed
- A 2-pipe, 2-position NO, SR
- B 2-pipe, 2-postion NC, SR
- D 2-pipe, 3-wire floating, FL
- E 2-pipe, 0-10 vdc NO, SR
- F 2-pipe, 0-10 vdc NC, SR
- G 4-pipe, 2 position CW NO, HW NC, SR
- H 4 pipe, 2 position CW NC, HW NO, SR
- J 4-pipe, 0-10 vdc CW NO, HW NC, SR
- K 4-pipe, 0-10 vdc CW NC, HW NO, SR
- P 4-pipe, 2-position NO, SR
- Q 4-pipe, 2-postion NC, SR
- R 4-pipe, 3-wire floating, FL
- S 4-pipe, 0-10 vdc NO, SR
- T 4-pipe, 0-10 vdc NC, SR
- 9 <u>Special</u> Select for option not listed above. Digit 30 must also be 'S'. Temspec must be consulted for any "Special" options before an order can accepted.

Note: SR=spring return, FL=fail last. All valves are 24VAC.

Digit 28 – Thermostat/Controller Mounting Location & Insulation

- A Remote mounted thermostat/controller (1" fiberglass)
- B Unit mounted thermostat/controller provided by **factory** (1" fiberglass)
- C Remote mounted thermostat/controller (1/2" Closed Cell equivalent insulation)
- D Unit mounted thermostat/controller provided by factory (1/2" Closed Cell equivalent Insulation)
- E Unit mounted thermostat/controller provided by **others** (1" fiberglass)
- F Unit mounted thermostat/controller provided by **others** (1/2" Closed Cell equivalent Insulation)

Digit 29 - Drain Pan

Note: All drain pans are double sloped

- Y None (heating only)
- 1 Acrylic coated galvanized (size 06-12) (Corrosion resistance - Good)
- 2 Acrylic coated galvanized with condensate switch (sizes 06-12) (Corrosion resistance – Good)
- 3 304 SS (Size 03-12) (Corrosion resistance Better)
- 4 304SS with condensate switch (Corrosion resistance Better)
- 5 Polymer (sizes 03-04) (Corrosion resistance Best)
- 6 Polymer with condensate switch (sizes 03-04) (Corrosion resistance Best)

Digit 30 - Design Sequence

- A Current design
- S Daikin Special

Digit 31 – Spacer

Digit 32 - Top SA Opening

- Y None
- V Top duct connection

Digit 33 - SA Grille/Register Opening(s)

Note: Line of sight and sound baffle provided with front and back or two side grills selected. See grille size chart

- Y None
- A Single front
- B Single back
- C Single left
- D Single right
- E Front and left
- F Front and right
- G Front, right & left
- H Front and back
- J Left and right
- K Back & left
- L Back & right

Digit 34 - Filters 1" MERV 10

- 1 1 set
- 2 2 sets

Digit 35 - Riser location

- 3 Left
- 4 Right
- 5 Back
- 6 Reverse Left
- 7 Reverse Right
- 8 Reverse Back

Digit 36 - Risers, Shipping Method

Note: See separate riser code string if supplied. Stubout height is 36". Consult factory for specials

- Y No risers
- 1 Attached to the unit
- 2 Shipped loose

Digit 37 - Raised Base

- Y None
- A 4" raised base
- B 8" raised base
- C 8" raised base with access door
- D 8" raised base with access door and $120-240\nu$ condensate pump
- E 8" raised base with access door and 277v condensate pump
- F 12" raised base
- G 12" raised base with access door
- H 12" raised base with access door and 120-240v condensate pump
- J 12" raised base with access door and 277v condensate $\ensuremath{\mathsf{pump}}$

Note: *If condensate pump is required, raised base with condensate pump must be factory installed.

Digit 38 - External Static Pressure (IN W.C)

F - Direct Supply
J - 0.2*
K - 0.4**
Note: * 0.2 is max ESP for 300 or 400 nominal CFM units.
**Contact Temspec for nominal CFM.

Digit 39 - Spacer

Digit 40,41, – Riser Number

YY -No riser number 0 - Spacer *Example: Riser* 9 = 09

Digit 42,43 - Floor Number

YY -No floor number Example: $6^{th} floor = 06,$ $35^{th} floor = 35$

Digit 44,45,46,47 - Room Number

YYYY = No room number 0 = Spacer *Example: Suite 10 = 0010,*

Suite 945 = 0945 Suite 1030 = 1030

Digit 48 - Special

Y - None

What makes us Better?

High Efficiency ECM Impeller Fans

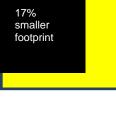




100-400 CFM

300-1200 CFM

Electronically commutated motors, ECM, with backward inclined fans are typically 25% more efficient than PSC motors and forward curved fans at full load and up 70% more efficient at part load. In a typical 250 suite condominium or hotel in climate zone 5, this represents energy savings of more than 100,000 kWh annually and significant maintenance cost reduction. The 0-10VDC variable speed fan operates at the lowest speed possible to maintain the room temperature for a quiet and extremely efficient operation



Smallest Footprint

Our 300-400CFM units footprint is 17% smaller than most competitors. In a 250suite project, this represents 60 sq ft of leasable savings and allows the unit to fit any retrofit application

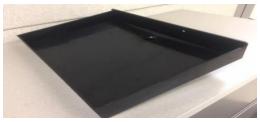


Exceptionally Quiet

The new stacked fan coil unit was designed with the target of being the quietest unit on the market. The cabinet size and shape, fan design and location, and

cabinet acoustic treatments all play a role in achieving your desired space NC level

100% Corrosion 100% Corrosion Resistant Polymer Drain Pan



The failure mode for any drain pan, stainless or galvanized steel is corrosion leading to a leak. Polymer offers an indefinite service life and is the least expensive option

Hinged Filter Access Panel



Makes filter changes quick and easy with no tools

Digital Programmable Thermostat



Our standard thermostat provides variable speed fan control, unoccupied setpoints, optional remote temperature and occupancy sensor for additional energy savings. Wi-Fi, BACnet, and multi-speed fan thermostats are compatible



installation time is reduced by 30 minutes per unit by having to solder only one joint

Swaged Riser Ends

Allows quick installation with no couplings which saves significant time and material cost. It is estimated that the

Performance Data

Cooling Capacities

AHRI-Certified cooling performance is based on ANSI/AHRI Standard 440-2019: Performance Rating of Room Fan-Coils: 80/67°F entering air temperature, 45°F entering chilled water temperature with a 10°F delta T. All performance measured using 120V AC motor, 0.05 inches ESP without filters or grilles.

| Model | Coil | Airflow (cfm) | Total Capacity (MBH) | Sensible Capacity (MBH) | Water Flow (GPM) | WPD (ft H2O) | Power Input (w) |
|-------|-----------------------|------------------|----------------------------|-------------------------------|------------------------|-----------------|--------------------|
| | 3 Row cooling/ 14 FPI | 300 | 9.1 | 6.5 | 2.1 | 4.5 | 29 |
| 03 | 4 Row cooling/ 14 FPI | 300 | 10.0 | 6.8 | 2.3 | 3.7 | 31 |
| | 3 Row cooling/ 12 FPI | 300 | 8.5 | 6.2 | 1.95 | 3.7 | 28 |
| | 4 Row cooling/ 12 FPI | 300 | 9.2 | 6.7 | 2.14 | 3.4 | 30 |
| | 3 Row cooling/ 14 FPI | 400 | 11.2 | 8.2 | 2.6 | 6.6 | 58 |
| 04 | 4 Row cooling/ 14 FPI | 400 | 12.3 | 8.7 | 2.8 | 5.6 | 59 |
| 04 - | 3 Row cooling/ 12 FPI | 400 | 10.3 | 7.9 | 2.4 | 5.1 | 56 |
| _ | 4 Row cooling/ 12 FPI | 400 | 11.4 | 8.5 | 2.63 | 4.9 | 57 |
| | 3 Row cooling/ 14 FPI | 600 | 19.3 | 13.5 | 4.5 | 12.9 | 64 |
| 00 | 4 Row cooling/ 14 FPI | 600 | 21.9 | 14.6 | 5.1 | 15.4 | 66 |
| 06 | 3 Row cooling/ 12 FPI | 600 | 18.1 | 12.7 | 4.2 | 11.7 | 62 |
| | 4 Row cooling/ 12 FPI | 600 | 20.6 | 13.9 | 4.8 | 19.1 | 65 |
| | 3 Row cooling/ 14 FPI | 800 | 23.9 | 17.5 | 5.6 | 19.7 | 139 |
| 08 | 4 Row cooling/ 14 FPI | 800 | 27.1 | 19.2 | 6.4 | 22.9 | 142 |
| 00 | 3 Row cooling/ 12 FPI | 800 | 21.9 | 16.5 | 5.1 | 16.4 | 138 |
| | 4 Row cooling/ 12 FPI | 800 | 25.4 | 18.3 | 5.9 | 17.9 | 140 |
| | 3 Row cooling/ 14 FPI | 1000 | 31.6 | 22.5 | 7.4 | 18.9 | 174 |
| 10 | 4 Row cooling/ 14 FPI | 1000 | 36.2 | 24.7 | 8.5 | 16.5 | 177 |
| 10 | 3 Row cooling/ 12 FPI | 1000 | 29.3 | 21.4 | 6.8 | 15.2 | 173 |
| | 4 Row cooling/ 12 FPI | 1000 | 33.8 | 23.7 | 7.9 | 16.5 | 175 |
| | 3 Row cooling/ 14 FPI | 1200 | 35.4 | 25.8 | 8.3 | 20.4 | 277 |
| 40 | 4 Row cooling/ 14 FPI | 1200 | 40.9 | 28.6 | 9.6 | 18.9 | 282 |
| 12 | 3 Row cooling/ 12 FPI | 1200 | 32.6 | 24.4 | 7.6 | 18.8 | 278 |
| - | 4 Row cooling/ 12 FPI | 1200 | 38.6 | 27.6 | 9.0 | 19.9 | 280 |

Heating performance is based on 70°F entering air temperature and listed entering water temperatures. All performance measured using 120V AC motor, 0.05 inches ESP without filters or grilles. 1-row and 2-row coils are in the preheat configuration as part of a 4-pipe system. 3-row and 4-row coils are only available as part of a 2-pipe system or 6 way valve systems.

Cabinet 03-04 – 4 Pipe Units

| | | | | Entering W | ater Temp. 1 | 40°F | | | | |
|-----|----------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 1.0 GPM | | | 2.0 GPM | | | 3.0 GPM | |
| 300 | 1-Row Heating | 9.4 | 0.8 | 119 | 10.7 | 2.6 | 128 | 11.2 | 5.4 | 132 |
| 300 | 2-Row Heating | 12.5 | 0.2 | 113 | 14.9 | 0.8 | 124 | 15.7 | 1.6 | 129 |
| 400 | 1-Row Heating | 10.7 | 0.8 | 117 | 12.5 | 2.6 | 127 | 13.3 | 5.4 | 131 |
| 400 | 2-Row Heating | 14.2 | 0.2 | 110 | 17.7 | 0.8 | 121 | 19 | 1.6 | 126 |
| | | | | Entering W | ater Temp. 1 | 60°F | | | | |
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 1.0 GPM | | | 2.0 GPM | | | 3.0 GPM | |
| 300 | 1-Row Heating | 12.2 | 0.8 | 133 | 13.9 | 2.5 | 145 | 14.5 | 5.1 | 149 |
| 300 | 2-Row Heating | 16.3 | 0.2 | 125 | 19.2 | 0.8 | 139 | 20.3 | 1.5 | 145 |
| 400 | 1-Row Heating | 13.9 | 0.8 | 130 | 16.2 | 2.5 | 143 | 17.1 | 5.1 | 148 |
| 400 | 2-Row Heating | 18.5 | 0.2 | 120 | 22.9 | 0.8 | 135 | 24.6 | 1.5 | 142 |
| | | | | Entering W | ater Temp. 1 | B0°F | | | | |
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 1.0 GPM | | | 2.0 GPM | | | 3.0 GPM | |
| 300 | 1-Row Heating | 15 | 0.7 | 147 | 17 | 2.4 | 161 | 17.6 | 4.8 | 166 |
| 300 | 2-Row Heating | 20.2 | 0.2 | 136 | 23.7 | 0.7 | 154 | 25 | 1.5 | 162 |
| 400 | 1-Row Heating | 17.1 | 0.7 | 143 | 19.9 | 2.4 | 158 | 21.1 | 4.9 | 165 |
| 400 | 2-Row Heating | 23 | 0.2 | 130 | 28.8 | 0.7 | 149 | 30.3 | 1.5 | 158 |

Heating performance is based on 70°F entering air temperature and listed entering water temperatures. All performance measured using 120V AC motor, 0.05 inches ESP without filters or grilles. 1-row and 2-row coils are in the preheat configuration as part of a 4-pipe system. 3-row and 4-row coils are only available as part of a 2-pipe system or 6 way valve systems.

Cabinet 03-04 - 2 Pipe/ 6 Way Valve Units

| | | | | Entering \ | Nater Temp. | 130°F | | | | |
|-----|---------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.0 GPM | | | 2.0 GPM | | | 3.0 GPM | |
| 300 | 3-Row Heating | 12.7 | 0.4 | 103 | 15.0 | 1.2 | 114 | 15.7 | 2.5 | 119 |
| 300 | 4-Row Heating | 13.3 | 0.2 | 102 | 15.9 | 0.5 | 113 | 16.7 | 1.1 | 118 |
| 400 | 3-Row Heating | 14.6 | 0.4 | 99 | 18.2 | 1.2 | 111 | 19.5 | 2.5 | 116 |
| 400 | 4-Row Heating | 15.3 | 0.2 | 97 | 19.4 | 0.5 | 109 | 20.9 | 1.1 | 115 |
| | | | | Entering \ | Vater Temp. 2 | 120°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.0 GPM | | | 2.0 GPM | | | 3.0 GPM | |
| 300 | 3-Row Heating | 10.5 | 0.4 | 98 | 12.5 | 1.3 | 107 | 13.1 | 2.6 | 111 |
| 300 | 4-Row Heating | 11.0 | 0.2 | 97 | 13.2 | 0.5 | 106 | 13.9 | 1.1 | 110 |
| 400 | 3-Row Heating | 12.1 | 0.4 | 94 | 15.1 | 1.3 | 104 | 16.2 | 2.6 | 109 |
| 400 | 4-Row Heating | 12.6 | 0.2 | 93 | 16.1 | 0.5 | 103 | 17.4 | 1.1 | 108 |
| | | | | Entering \ | Vater Temp. | 110°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.0 GPM | | | 2.0 GPM | | | 3.0 GPM | |
| 300 | 3-Row Heating | 8.3 | 0.4 | 92 | 9.9 | 1.3 | 99 | 10.4 | 2.6 | 103 |
| 300 | 4-Row Heating | 8.7 | 0.2 | 91 | 10.5 | 0.6 | 99 | 11.1 | 1.1 | 102 |
| 400 | 3-Row Heating | 9.6 | 0.4 | 90 | 12.0 | 1.3 | 97 | 12.9 | 2.6 | 101 |
| 400 | 4-Row Heating | 10.0 | 2.0 | 89 | 12.8 | 0.6 | 96 | 13.9 | 1.1 | 100 |
| | | • | | Entering \ | Vater Temp. | 105°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.0 GPM | | | 2.0 GPM | | | 3.0 GPM | |
| 300 | 3-Row Heating | 7.3 | 0.4 | 90 | 8.7 | 1.3 | 96 | 9.1 | 2.6 | 99 |
| 300 | 4-Row Heating | 7.6 | 0.2 | 89 | 9.2 | 0.6 | 95 | 9.7 | 1.1 | 98 |
| 400 | 3-Row Heating | 8.3 | 0.4 | 87 | 10.5 | 1.3 | 94 | 11.3 | 2.7 | 97 |
| 400 | 4-Row Heating | 8.7 | 0.2 | 87 | 11.2 | 0.6 | 93 | 12.1 | 1.1 | 96 |

Heating performance is based on 70°F entering air temperature and listed entering water temperatures. All performance measured using 120V AC motor, 0.05 inches ESP without filters or grilles. 1-row and 2-row coils are in the preheat configuration as part of a 4-pipe system. 3-row and 4-row coils are only available as part of a 2-pipe system or 6 way valve systems.

Cabinet 06-08 – 4 Pipe Units

| | | | | Entering W | ater Temp. 1 | 40°F | | | | |
|-----|----------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 1.5 GPM | | | 2.5 GPM | | | 3.5 GPM | |
| 600 | 1-Row Heating | 17 | 0.4 | 116 | 19.5 | 0.9 | 123 | 20.8 | 1.7 | 127 |
| 600 | 2-Row Heating | 24.7 | 0.8 | 105 | 28.5 | 1.9 | 116 | 30.3 | 3.4 | 121 |
| 800 | 1-Row Heating | 19.1 | 0.4 | 113 | 22.4 | 0.9 | 121 | 24.1 | 1.7 | 125 |
| 800 | 2-Row Heating | 27.9 | 0.8 | 100 | 33.5 | 1.9 | 111 | 36.2 | 3.4 | 118 |
| | | | | Entering W | ater Temp. 1 | 60°F | | - | | |
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 1.5 GPM | | | 2.5 GPM | | | 3.5 GPM | |
| 600 | 1-Row Heating | 22.2 | 0.4 | 128 | 25.2 | 0.9 | 138 | 26.7 | 1.6 | 143 |
| 600 | 2-Row Heating | 32.1 | 0.8 | 114 | 36.9 | 1.8 | 130 | 39.2 | 3.3 | 136 |
| 800 | 1-Row Heating | 25 | 0.4 | 124 | 29.1 | 0.9 | 135 | 31.3 | 1.6 | 141 |
| 800 | 2-Row Heating | 36.3 | 0.8 | 108 | 43.3 | 1.8 | 123 | 46.8 | 3.3 | 131 |
| | | | | Entering W | ater Temp. 1 | 80°F | | - | | |
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 1.5 GPM | | | 2.5 GPM | | | 3.5 GPM | |
| 600 | 1-Row Heating | 27.3 | 0.3 | 141 | 30.9 | 0.8 | 153 | 33 | 1.5 | 159 |
| 600 | 2-Row Heating | 39.4 | 0.7 | 123 | 45.3 | 1.7 | 141 | 48.1 | 3.1 | 150 |
| 800 | 1-Row Heating | 30.8 | 0.4 | 136 | 35.8 | 0.8 | 149 | 38.5 | 1.5 | 156 |
| 800 | 2-Row Heating | 44.7 | 0.7 | 116 | 53.2 | 1.8 | 134 | 57.5 | 3.1 | 144 |

Heating performance is based on 70°F entering air temperature and listed entering water temperatures. All performance measured using 120V AC motor, 0.05 inches ESP without filters or grilles. 1-row and 2-row coils are in the preheat configuration as part of a 4-pipe system. 3-row and 4-row coils are only available as part of a 2-pipe system or 6 way valve systems.

Cabinet 06-08 - 2 Pipe/ 6 Way Valve Units

| | | | | Entering W | /ater Temp. 1 | 30°F | | | | |
|-----|---------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.5 GPM | | | 2.5 GPM | | | 3.5 GPM | |
| 600 | 3-Row Heating | 23.5 | 0.4 | 97 | 27.9 | 1.0 | 106 | 29.8 | 1.7 | 112 |
| 600 | 4-Row Heating | 24.9 | 0.2 | 95 | 29.9 | 0.6 | 105 | 32.0 | 1.0 | 111 |
| 800 | 3-Row Heating | 26.4 | 0.4 | 92 | 33.0 | 1.0 | 102 | 36.0 | 1.7 | 108 |
| 800 | 4-Row Heating | 27.9 | 0.2 | 90 | 35.5 | 0.6 | 100 | 39.1 | 1.0 | 106 |
| | | | | Entering W | /ater Temp. 1 | 20°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.5 GPM | | | 2.5 GPM | | | 3.5 GPM | |
| 600 | 3-Row Heating | 19.4 | 0.4 | 92 | 23.1 | 1.0 | 100 | 24.7 | 1.8 | 105 |
| 600 | 4-Row Heating | 20.6 | 0.2 | 91 | 24.7 | 0.6 | 99 | 26.5 | 1.1 | 104 |
| 800 | 3-Row Heating | 21.8 | 0.4 | 89 | 27.3 | 1.0 | 97 | 29.9 | 1.8 | 102 |
| 800 | 4-Row Heating | 23.0 | 0.2 | 87 | 29.3 | 0.6 | 95 | 32.4 | 1.1 | 100 |
| | | | | Entering W | /ater Temp. 1 | .10°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.5 GPM | | | 2.5 GPM | | | 3.5 GPM | |
| 600 | 3-Row Heating | 15.4 | 0.4 | 88 | 18.4 | 1.0 | 94 | 19.7 | 1.8 | 98 |
| 600 | 4-Row Heating | 16.3 | 0.3 | 87 | 19.7 | 0.6 | 93 | 21.1 | 1.1 | 97 |
| 800 | 3-Row Heating | 17.3 | 0.4 | 86 | 21.7 | 1.0 | 92 | 23.9 | 1.8 | 96 |
| 800 | 4-Row Heating | 18.3 | 0.3 | 84 | 23.3 | 0.6 | 90 | 25.8 | 1.1 | 94 |
| | | | | Entering W | /ater Temp. 1 | 05°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 1.5 GPM | | | 2.5 GPM | | | 3.5 GPM | |
| 600 | 3-Row Heating | 13.4 | 0.4 | 86 | 16.0 | 1.0 | 91 | 17.2 | 1.8 | 95 |
| 600 | 4-Row Heating | 14.2 | 0.3 | 85 | 17.2 | 0.6 | 90 | 18.5 | 1.1 | 94 |
| 800 | 3-Row Heating | 15.1 | 0.4 | 84 | 18.9 | 1.0 | 89 | 20.8 | 1.8 | 92 |
| 800 | 4-Row Heating | 15.9 | 0.3 | 83 | 20.3 | 0.6 | 88 | 22.5 | 1.1 | 91 |

Heating Capacities – 4 Pipe Units

Heating performance is based on 70°F entering air temperature and listed entering water temperatures. All performance measured using 120V AC motor, 0.05 inches ESP without filters or grilles. 1-row and 2-row coils are in the preheat configuration as part of a 4-pipe system. 3-row and 4-row coils are only available as part of a 2-pipe system or 6 way valve systems.

Cabinet 10-12 – 4 Pipe Units

| | | | F | Entering W | ater Temp. 14 | 40°F | | | | |
|------|----------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 2.5 GPM | | | 3.5 GPM | | | 4.5 GPM | |
| 1000 | 1-Row Heating | 24.4 | 1.1 | 119 | 26.4 | 2 | 124 | 27.6 | 3 | 127 |
| 1000 | 2-Row Heating | 36.8 | 2.3 | 108 | 40.2 | 4 | 115 | 42.2 | 6.2 | 119 |
| 1200 | 1-Row Heating | 26.5 | 1.1 | 117 | 28.9 | 2 | 122 | 30.4 | 3 | 125 |
| 1200 | 2-Row Heating | 39.9 | 2.3 | 105 | 44.2 | 4.1 | 112 | 46.8 | 6.3 | 117 |
| | | | E | Entering W | ater Temp. 10 | 50°F | | | | |
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 2.5 GPM | | | 3.5 GPM | | | 4.5 GPM | |
| 1000 | 1-Row Heating | 31.9 | 1 | 133 | 34.1 | 1.9 | 139 | 35.5 | 2.9 | 143 |
| 1000 | 2-Row Heating | 47.5 | 2.2 | 118 | 51.9 | 3.9 | 127 | 54.5 | 6 | 133 |
| 1200 | 1-Row Heating | 34.4 | 1.1 | 129 | 37.4 | 1.9 | 136 | 39.3 | 2.9 | 141 |
| 1200 | 2-Row Heating | 51.6 | 2.2 | 114 | 57.1 | 3.9 | 124 | 60.5 | 6 | 130 |
| | | r | E | Intering W | ater Temp. 18 | 80°F | | T | , , | |
| | Size/ model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Row(s) Heating | | 2.5 GPM | | | 3.5 GPM | | | 4.5 GPM | |
| 1000 | 1-Row Heating | 39.1 | 1 | 147 | 42.2 | 1.8 | 154 | 43.1 | 2.8 | 157 |
| 1000 | 2-Row Heating | 58.3 | 2.1 | 128 | 63.7 | 3.7 | 139 | 65.3 | 5.7 | 145 |
| 1200 | 1-Row Heating | 42.4 | 1 | 142 | 46 | 1.8 | 151 | 48.3 | 2.8 | 156 |
| 1200 | 2-Row Heating | 63.4 | 2.1 | 123 | 70.1 | 3.7 | 135 | 74.2 | 5.7 | 143 |

Heating Capacities – 4 Pipe Units

Heating performance is based on 70°F entering air temperature and listed entering water temperatures. All performance measured using 120V AC motor, 0.05 inches ESP without filters or grilles. 1-row and 2-row coils are in the preheat configuration as part of a 4-pipe system. 3-row and 4-row coils are only available as part of a 2-pipe system or 6 way valve systems.

Cabinet 10-12 – 2 Pipe/ 6 Way Valve Units

| | | | | Entering W | ater Temp. 1 | 30°F | | | | |
|------|---------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|----------------------------|-----------------|-------------|
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 2.5 GPM | | | 3.5 GPM | | | 4.5 GPM | |
| 1000 | 3-Row Heating | 36.4 | 1.1 | 98 | 40.4 | 2.0 | 105 | 42.7 | 3.2 | 109 |
| 1000 | 4-Row Heating | 39.4 | 0.7 | 95 | 44.2 | 1.2 | 102 | 46.8 | 1.9 | 107 |
| 1200 | 3-Row Heating | 39.5 | 1.2 | 95 | 44.6 | 2.1 | 102 | 47.6 | 3.2 | 107 |
| 1200 | 4-Row Heating | 42.6 | 0.7 | 92 | 49.0 | 1.2 | 99 | 52.5 | 1.9 | 104 |
| | | | | Entering W | ater Temp. 1 | 20°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 2.5 GPM | | | 3.5 GPM | | | 4.5 GPM | |
| 1000 | 3-Row Heating | 30.2 | 1.2 | 93 | 33.6 | 2.1 | 99 | 35.5 | 3.2 | 103 |
| 1000 | 4-Row Heating | 32.6 | 0.7 | 91 | 36.7 | 1.3 | 97 | 36.7 | 2.0 | 101 |
| 1200 | 3-Row Heating | 32.7 | 1.2 | 91 | 37.1 | 2.1 | 97 | 39.6 | 3.2 | 101 |
| 1200 | 4-Row Heating | 35.3 | 0.7 | 89 | 40.6 | 1.3 | 95 | 43.7 | 2.0 | 99 |
| | | | | Entering W | ater Temp. 1 | 10°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 2.5 GPM | | | 3.5 GPM | | | 4.5 GPM | |
| 1000 | 3-Row Heating | 24.0 | 1.2 | 89 | 26.8 | 2.1 | 93 | 28.3 | 3.3 | 96 |
| 1000 | 4-Row Heating | 25.9 | 0.7 | 87 | 29.2 | 1.3 | 92 | 31.1 | 2.0 | 95 |
| 1200 | 3-Row Heating | 26.0 | 1.2 | 87 | 29.5 | 2.1 | 91 | 31.6 | 3.3 | 95 |
| 1200 | 4-Row Heating | 28.0 | 0.7 | 85 | 32.3 | 1.3 | 90 | 34.8 | 2.0 | 93 |
| | | | | Entering W | ater Temp. 1 | 05°F | | | | |
| | Size/ Model | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) | Total Capacity (MBH) | WPD (ft H2O) | LWT (°F) |
| CFM | Rows Heating | | 2.5 GPM | | | 3.5 GPM | | | 4.5 GPM | |
| 1000 | 3-Row Heating | 20.9 | 1.2 | 87 | 23.4 | 2.2 | 90 | 24.7 | 3.3 | 93 |
| 1000 | 4-Row Heating | 22.6 | 0.7 | 85 | 25.5 | 1.3 | 89 | 27.1 | 2.0 | 92 |
| 1200 | 3-Row Heating | 22.7 | 1.2 | 85 | 25.8 | 2.2 | 89 | 27.6 | 3.3 | 92 |
| 1200 | 4-Row Heating | 24.4 | 0.7 | 84 | 28.1 | 1.3 | 87 | 30.4 | 2.0 | 90 |

Note: 140F or less entering water temperature recommended to take advantage of high efficiency condensing boilers or use of heat pumps for a heating source. 6-way valves may be used to achieve heating loads in northern climates with low temperature supply water temperatures

Sound Data

| | | | | | 1/ | /3 Octave E | Band Frequ | encies (Hz |) | | |
|-------|------|---|----|-----|-----|-------------|------------|------------|------|------|----------------|
| | | | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | A-wt. (dBA) |
| Model | CFM | | | | | Sou | nd Power, | dB | | | |
| 03-04 | 175 | - | 60 | 52 | 42 | 38 | 32 | 26 | 26 | 32 | 42 |
| | 225 | - | 60 | 57 | 44 | 39 | 34 | 28 | 26 | 32 | 45 |
| | 300 | - | 59 | 61 | 49 | 43 | 38 | 33 | 27 | 32 | 48 |
| _ | 350 | - | 59 | 62 | 54 | 46 | 39 | 34 | 28 | 32 | 50 |
| | 400 | - | 60 | 60 | 61 | 49 | 42 | 37 | 31 | 32 | 54 |
| | | | | | | | | | | | |
| 06-08 | 400 | - | 58 | 61 | 42 | 42 | 39 | 35 | 29 | 31 | 48 |
| | 500 | | 59 | 62 | 46 | 44 | 40 | 33 | 28 | 31 | 51 |
| | 600 | - | 64 | 65 | 53 | 48 | 44 | 36 | 28 | 32 | 54 |
| | 700 | - | 63 | 66 | 55 | 51 | 46 | 40 | 30 | 32 | 57 |
| | 800 | - | 65 | 67 | 58 | 54 | 48 | 43 | 33 | 32 | 59 |
| | | | | | | | | | | | |
| 10-12 | 600 | - | 63 | 68 | 53 | 48 | 44 | 36 | 28 | 32 | 54 |
| | 700 | - | 63 | 72 | 55 | 51 | 46 | 40 | 30 | 32 | 57 |
| | 800 | - | 65 | 73 | 58 | 54 | 48 | 43 | 33 | 32 | 59 |
| | 900 | - | 67 | 73 | 61 | 56 | 51 | 46 | 36 | 32 | 60 |
| | 1000 | - | 68 | 73 | 64 | 58 | 53 | 49 | 39 | 33 | 62 |
| | 1100 | - | 70 | 75 | 67 | 61 | 55 | 51 | 42 | 34 | 64 |
| | 1200 | - | 71 | 75 | 70 | 64 | 57 | 53 | 45 | 36 | 66 |

Consult factory for sound power values not listed.

| | | | | | 1/ | 3 Octave E | Band Frequ | encies (Hz | <u>z)</u> | | |
|-------|------------|-----|----|-----|-----|------------|------------|------------|-----------|----------|----------------|
| | 0514 | FOR | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | A-wt. (dBA) |
| Model | CFM | ESP | 05 | 50 | 40 | | Ind Power, | | 00 | 00 | 40 |
| 03-04 | 175 | 0.0 | 65 | 52 | 40 | 37 | 34 | 28 | 26 | 32 | 43 |
| | 225 | 0.0 | 66 | 54 | 46 | 39 42 | 34 35 | 29 | 26 | 32 32 | 45 47 |
| | 300 | 0.0 | 66 | 57 | 49 | | 1 | 30 | 27 | 32 | |
| | 350 | 0.0 | 67 | 60 | 53 | 45 | 35 | 30 | 27 | | 49 |
| | 400 | 0.0 | 67 | 57 | 60 | 48 | 37 | 31 | 28 | 32 | 53 |
| | 175 | 0.2 | 67 | 58 | 50 | 42 | 34 | 28 | 27 | 32 | 47 |
| | 225 | 0.2 | 65 | 55 | 49 | 43 | 36 | 32 | 29 | 32 | 46 |
| | 300 | 0.2 | 67 | 59 | 55 | 46 | 36 | 29 | 27 | 32 | 50 |
| | 350 | 0.2 | 65 | 56 | 61 | 49 | 37 | 31 | 28 | 32 | 54 |
| | 400 | 0.2 | 66 | 59 | 66 | 52 | 38 | 31 | 29 | 33 | 58 |
| 06-08 | 350 | 0.0 | 74 | 53 | 43 | 38 | 32 | 28 | 28 | 32 | 49 |
| | 400 | 0.0 | 67 | 60 | 49 | 42 | 34 | 30 | 28 | 32 | 48 |
| | 450 | 0.0 | 66 | 61 | 50 | 42 | 33 | 28 | 27 | 32 | 48 |
| | 500 | 0.0 | 65 | 62 | 52 | 44 | 35 | 29 | 28 | 32 | 50 |
| | 600 | 0.0 | 68 | 65 | 57 | 48 | 38 | 32 | 29 | 32 | 53 |
| | 700 | 0.0 | 71 | 69 | 61 | 52 | 41 | 37 | 34 | 33 | 57 |
| | 800 | 0.0 | 70 | 68 | 64 | 55 | 43 | 37 | 34 | 33 | 59 |
| | 400 | 0.2 | 64 | 59 | 52 | 44 | 34 | 29 | 28 | 32 | 48 |
| | 450 | 0.2 | 68 | 61 | 54 | 45 | 36 | 32 | 29 | 32 | 50 |
| | 500 | 0.2 | 67 | 64 | 56 | 47 | 38 | 33 | 30 | 32 | 52 |
| | 600 | 0.2 | 68 | 67 | 60 | 50 | 41 | 36 | 32 | 33 | 56 |
| | 700 | 0.2 | 68 | 67 | 63 | 53 | 43 | 38 | 34 | 34 | 58 |
| | 800 | 0.2 | 72 | 68 | 68 | 58 | 45 | 40 | 37 | 35 | 62 |
| 10-12 | 700 | 0.0 | 70 | 65 | 53 | 46 | 38 | 32 | 28 | 32 | 52 |
| 10-12 | 700 800 | 0.0 | 69 | 65 | 57 | 50 | 41 | 32 | 30 | 32 | 52 |
| | | | 72 | 66 | | 53 | | 34 | | 32 | 56 |
| | 900 | 0.0 | | | 60 | | 44 | | 33 | | - |
| | 1000 | 0.0 | 72 | 68 | 63 | 55 | 47 | 39 | 36 | 33 | 58 |
| | 1100 | 0.0 | 74 | 70 | 66 | 58 | 50 | 42 | 39 | 35 37 | 61 |
| | 1200 | 0.0 | 75 | 70 | 68 | 61 | 52 | 45 | 52 | | 63 |
| | 600 | 0.2 | 67 | 63 | 52 | 45 | 37 | 31 | 29 | 32 | 50 |
| | 700 | 0.2 | 69 | 65 | 56 | 49 | 40 | 33 | 30 | 32 | 53 |
| | 800 | 0.2 | 71 | 65 | 59 | 51 | 43 | 35 | 33 | 33 | 55 |
| | 900 | 0.2 | 74 | 67 | 62 | 54 | 46 | 38 | 35 | 33 | 58 |
| | 1000 | 0.2 | 73 | 70 | 65 | 57 | 48 | 40 | 37 | 34 | 60 |
| | 1100 | 0.2 | 79 | 69 | 67 | 61 | 50 | 43 | 40 | 36 | 63 |

Consult factory for sound power values not listed. Maximum airflow for size 03-04 unit is 400CFM @ 0.2" WC ESP. Maximum airflow for size 06-08 unit is 800CFM and 10-12 unit is 1200CFM both @ 0.4" WC ESP.

Electric Heat

| Model | KW | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 6.0 | 7.0 | 8.0 |
|-------|--------------|------|-----|------|------|------|------|----------|------|------|------|------|------|------|
| woder | Volts/ph./Hz | | | | | | He | eater Am | ps | | | | | |
| | 120V/1/60 | 6.3 | 8.3 | 12.5 | 16.7 | - | - | - | - | - | - | - | - | - |
| | 208V/1/60 | - | 4.8 | 7.2 | 9.6 | 12.0 | 14.4 | 16.8 | - | - | - | - | - | - |
| 03-04 | 240V/1/60 | - | 4.2 | 6.3 | 8.3 | 10.4 | 12.5 | 14.6 | - | - | - | - | - | - |
| | 277V/1/60 | - | 3.6 | 5.4 | 7.2 | 9.0 | 10.8 | 12.6 | - | - | - | - | - | - |
| | 120V/1/60 | 6.3 | 8.3 | 12.5 | 16.7 | - | - | - | - | - | - | - | - | - |
| | 208V/1/60 | - | 4.8 | 7.2 | 9.6 | 12.0 | 14.4 | 16.8 | 19.2 | 21.6 | 24.0 | 28.8 | - | - |
| 06-08 | 240V/1/60 | - | 4.2 | 6.3 | 8.3 | 10.4 | 12.5 | 14.6 | 16.7 | 18.8 | 20.8 | 25.0 | - | - |
| | 277V/1/60 | - | 3.6 | 5.4 | 7.2 | 9.0 | 10.8 | 12.6 | 14.4 | 16.2 | 18.1 | 21.7 | - | - |
| | 120V/1/60 | 6.3 | 8.3 | 12.5 | 16.7 | - | - | - | - | - | - | - | - | - |
| | 208V/1/60 | - | 4.8 | 7.2 | 9.6 | 12.0 | 14.4 | 16.8 | 19.2 | 21.6 | 24.0 | 28.8 | 33.7 | 38.5 |
| 10-12 | 240V/1/60 | - | 4.2 | 6.3 | 8.3 | 10.4 | 12.5 | 14.6 | 16.7 | 18.8 | 20.8 | 25.0 | 29.2 | 33.3 |
| | 277V/1/60 | - | 3.6 | 5.4 | 7.2 | 9.0 | 10.8 | 12.6 | 14.4 | 16.2 | 18.1 | 21.7 | 25.3 | 28.9 |

Note: Electric heat is available on 2-pipe systems only either as auxiliary or primary.

Heaters are wired for single stage operation

An Auto-reset high limit device is included

- Power connection is single point .
- The heater is located in the reheat position relative to the cooling coil

Air temp. rise (Delta T) = $\underline{kW \times 3160} = \underline{MBH \times 925}$ М

S.A = Supply Air

FLA = Full Load Amps

= S.A fan motor Amps + Electric Heater Amps

- MCA = Minimum Circuit Ampacity
- = FLA x 1.25
- MOP = Rating of maximum overcurrent protection device
 - = (2.25 x S.A. fan motor Amps) + Electric Heater Amps

Requirements of standards: UL 1995 and CSA C22.2 No.236

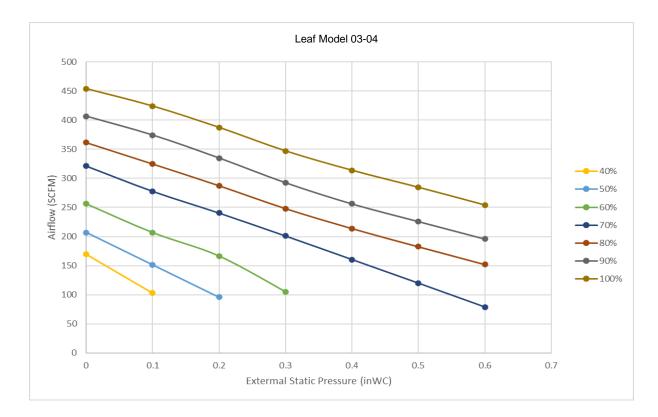
- If the value of the calculated rating does not equal standard current rating of overcurrent protective device, the marked maximum rating shall be the next lower standard rating.
- Exception No. 1: The marked maximum rating of the overcurrent protective device shall be the standard rating next higher than the computed value if the next lower standard rating is less than 125 percent of the current rating of an electric heater load when the unit includes an electric heater.
- Exception No. 2: If the computed value of the overcurrent protective device is less than the minimum ampacity of the supply circuit, the marked rating of the device shall be increased to the largest standard overcurrent protective device rating appropriate for the marked minimum circuit ampacity.
- Exception No. 3: If the marked minimum circuit ampacity does not correspond to a standard protective device rating, the next higher standard rating of the protective device may be marked.

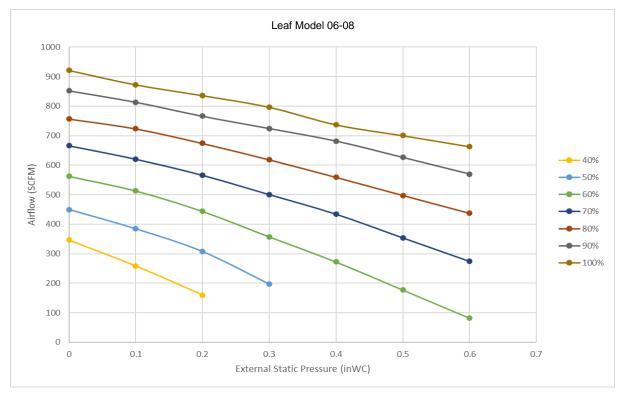
Motor Data (ECM 0-10VDC Control Signal)

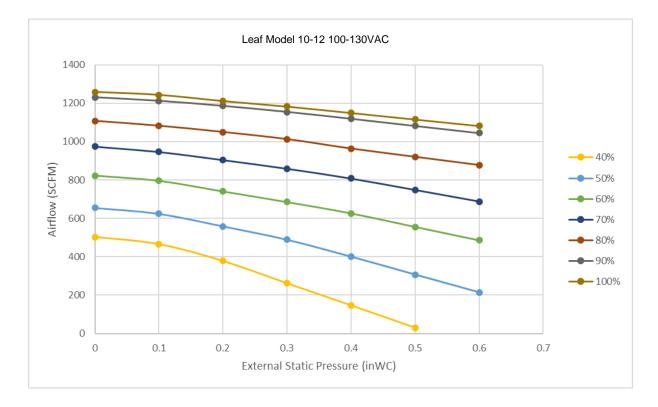
| Model | Connection Voltage | Namepl | CM ate Data | FLA | MOP | Model | CFM* | Watts* (Free |
|-------|---------------------------|---------|----------------|------|------|-------|----------------------------|-----------------|
| | Volts/ph./Hz | Wattage | Amps | Amps | Amps | | | discharge) |
| | 120V/1/60 | 85 | 1.3 | 1.63 | 15 | | 220 | 14 |
| 03 | 208-240V/1/60 | 80 | 0.7 | 0.88 | 15 | 03 | 272 | 21 |
| | 277V/1/60 | 80 | 0.7 | 0.88 | 15 | | *300 | 29 |
| | 120V/1/60 | 85 | 1.3 | 1.63 | 15 | | 328 | 32 |
| 04 | 208-240V/1/60 | 80 | 0.7 | 0.88 | 15 | 04 | 370 | 44 |
| | 277V/1/60 | 80 | 0.7 | 0.88 | 15 | | *400 | 59 |
| | 120V/1/60 | 165 | 2.3 | 2.88 | 15 | | 426 | 29 |
| 06 | 208-240V/1/60 | 168 | 1.4 | 1.75 | 15 | 06 | 563 | 50 |
| | 277V/1/60 | 168 | 1.4 | 1.75 | 15 | | 600 | 66 |
| | 120V/1/60 | 165 | 2.3 | 2.88 | 15 | | 571 | 50 |
| 08 | 1200/1/00 | 105 | 2.5 | 2.00 | 15 | 08 | 658 | 74 |
| 00 | 208-240V/1/60 | 168 | 1.4 | 1.75 | 15 | 00 | 743 | 107 |
| | 277V/1/60 | 168 | 1.4 | 1.75 | 15 | | *800 | 142 |
| | 120V/1/60 | 245 | 3.0 | 2 75 | 15 | | 667 | 67 |
| 10 | 1200/1/60 | 345 | 3.0 | 3.75 | 15 | 10 | 776 | 88 |
| | 200-277V/1/60 | 500 | 2.2 | 2.75 | 15 | | 929 | 133 |
| | 200 211 1/ 1/00 | | | 2.10 | 10 | | *1000 | 177 |
| | 120V/1/60 | 345 | 3.0 | 3.75 | 15 | | 768 823 | 97 107 |
| 12 | | | | | | 12 | | |
| | 200-277V/1/60 | 500 | 2.2 | 2.75 | 15 | | ² 1081 *1200 | 196 282 |
| *^ | l certified operating poi | | | | | | | 202 |

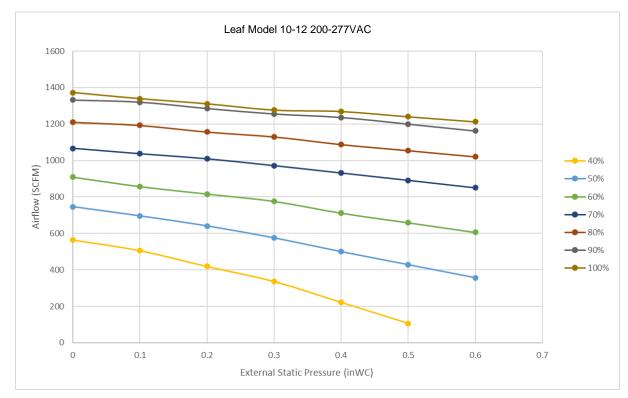
*AHRI certified operating points. Other CFM readings recorded during factory performance testing

AHRI-440 Rated Fan Curves









Control Options Standard Thermostats (24Vac)

| Manufacturer | Model | Heat/Cool Changeover | Description | Available Fan Speeds | Application |
|--------------|--------------|-------------------------|--|-------------------------|--|
| Spartan | TE226 | Auto | Programmable Digital On-off Valve and 0-10VDC Fan Control BEST VALUE | On/Auto | Residential or Hospitality |
| Viconics | VT8300 | Auto | Programmable Digital or analog valve control and 0-10VDC fan control & BACnet | On/Auto | Residential or Hospitality |
| INNCOM | E7 | Auto | Digital programmable 0-10VDC fan control, digital valve control, IoT gateway, PIR motion sensor | On/ Auto | Residential or Hospitality |
| Energex | Dream | Auto | Digital programmable 0-10VDC fan control, digital valve control, Wi-Fi Building Management App, Wireless PIR motion sensor | On/ Auto | Residential or Hospitality |
| Evolution | EVO- 4SPD | n/a | Converts conventional 3 speed fan signal thermostat to 0-10 VDC – allows max RPM adjustment for each speed | | Residential or Hospitality (Used with FCP) |

Note: The EVO board is required with any thermostat that does not have a 0-10VDC fan speed output. It is highly recommended that a variable speed fan signal be used to reduce energy consumption, reduce noise, and maintain a lower relative humidity in cooling mode. The Leaf unit is compatible with all wire-less thermostats. Contact us to select the appropriate interface.

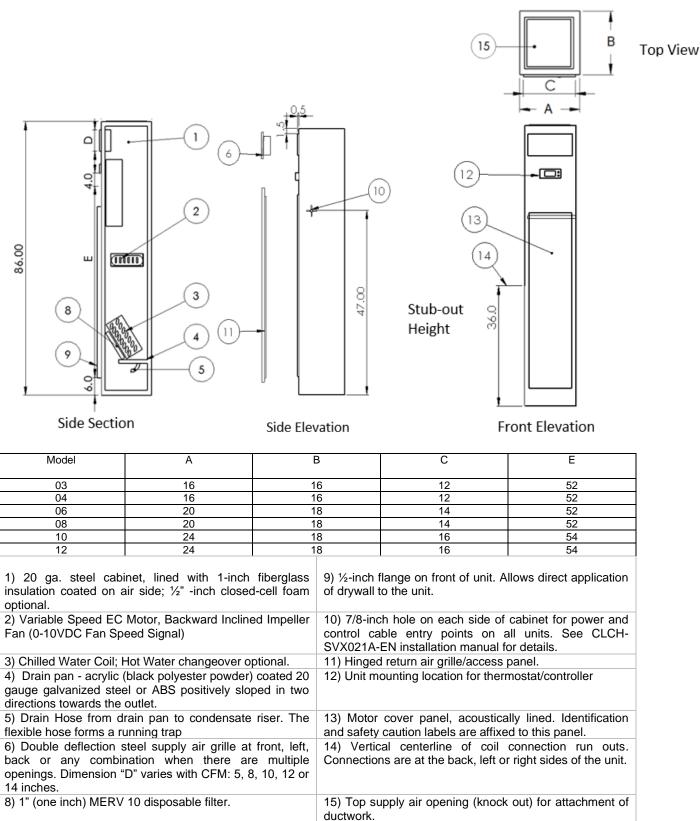
Standard Sequence of Operation: (Spartan TE226 – On/Off heating/cooling programmable temperature controller with P + I control for ECM variable airflow fan)

The thermostat measures the room temperature with an integral sensor with optional 10K external sensor. The P+I algorithm will signal the heating or cooling valve to open or close and modulate the fan speed to maintain the setpoint. The fan speed will slow as the setpoint is approached until it reaches 20% of airflow and then close the valve and signal the fan to stop. In fan mode, the fan will continue to operate when the set point is met delivering a minimum airflow set by the contractor/owner.

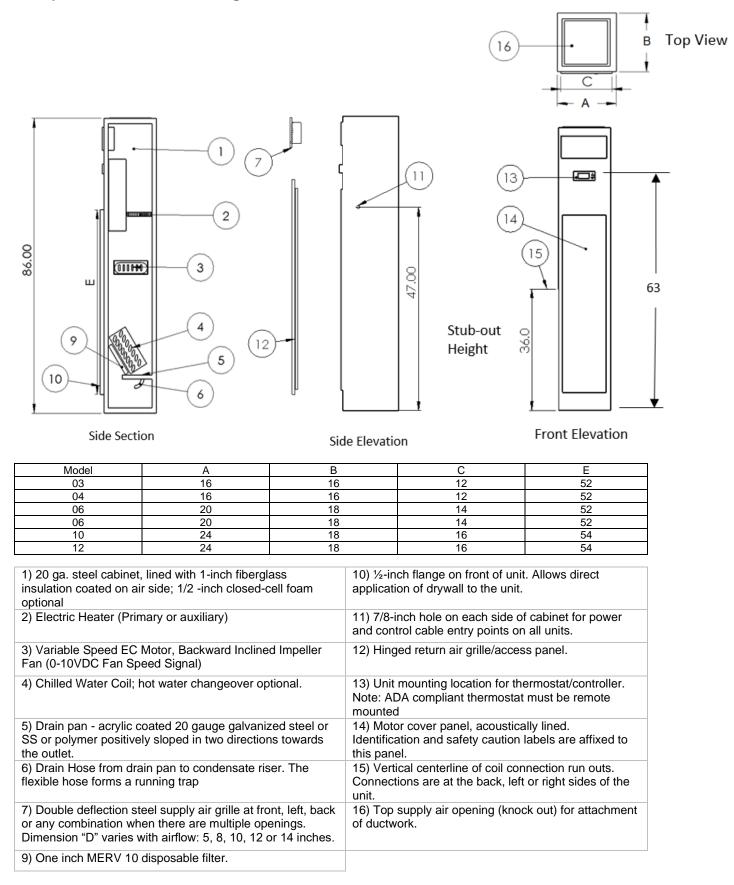
The thermostat has optional digital inputs such as occupancy sensors to enhance energy savings. It is equipped with a large LCD screen showing room temperature and set point, time, day, and related status. Minimum and maximum airflows can be set, as well adjustable hi/low limit setpoint range.

Concealed Fan Coil Unit Dimensions

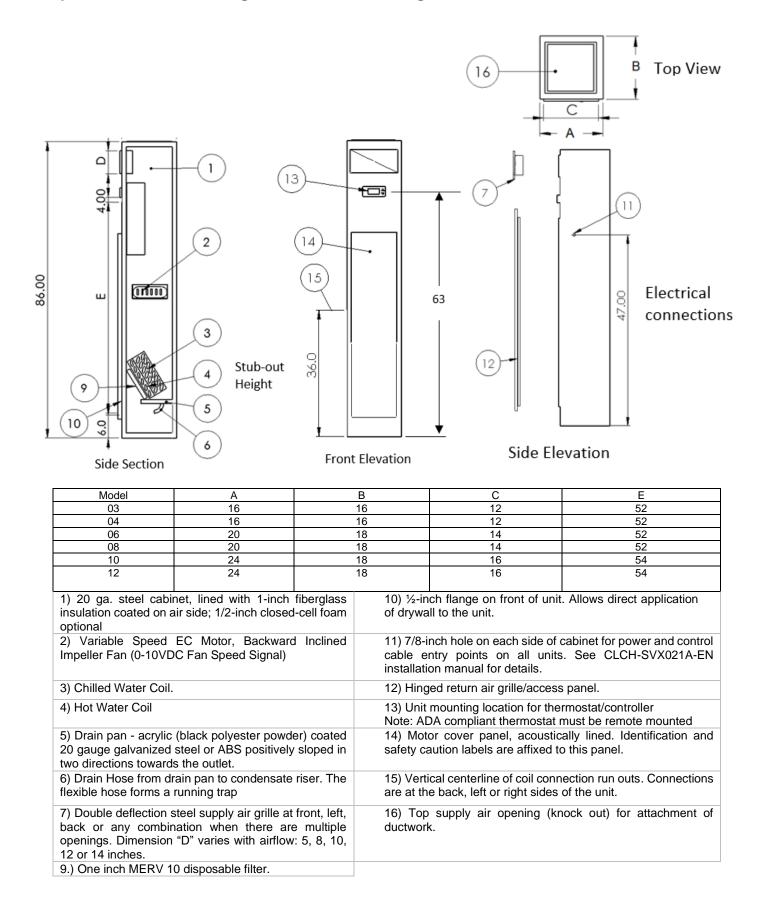
2-pipe Chilled Water-Cooling Unit



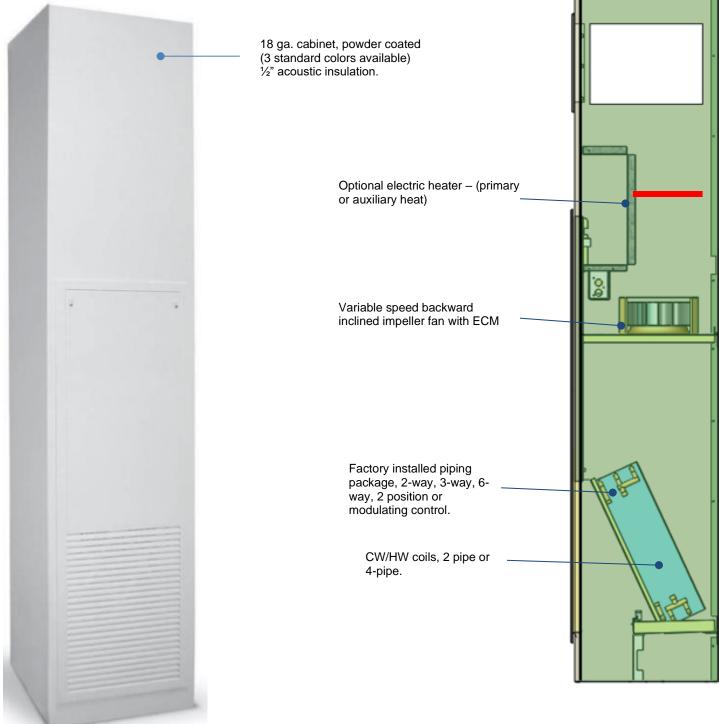
2-Pipe Chilled Water-Cooling Unit with Electric Heat



4-Pipe Chilled Water Cooling and Hot Water Heating Unit

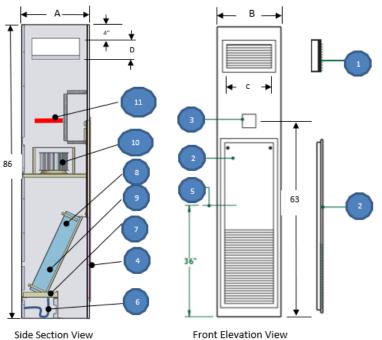


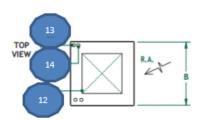
Finished Cabinet Fan Coil



The finished cabinet fan coil is designed for dormitories or other spaces where an exposed unit is desirable. The unit is constructed of robust 18 gauge metal with a powder coated finish for durability. Optional pipe (riser covers) and top extensions are available to provide a finished appearance with no exposed ductwork or water piping. The thermostat can be unit or remote mounted. Power and control cable entry is on the top of unit.

Finished Cabinet Unit Dimensions



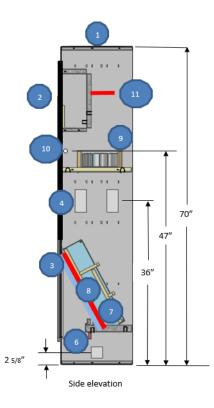


| Model | А | В | С |
|-------|-----|-----|-----|
| 03 | 18" | 18" | 14" |
| 04 | 18" | 18" | 14" |
| 06 | 20" | 20" | 16″ |
| 08 | 20" | 20" | 16" |
| 10 | 20" | 24" | 16" |
| 12 | 20" | 24" | 16″ |

| Side | Section | View |
|------|---------|------|
| | | |

| 1) Double deflection supply air grille at front, left, right, back or any combination when there are multiple openings. Dimension's "D" varies with airflow, 5", 8" 10" or 12" | 8) Chilled water coil (3 or 4 row) |
|--|--|
| 2) Removeable access panel incorporating return air grille | 9) Hot water coil (1 or 2 row) in 4-pipe units |
| 3) Thermostat location if unit mounted Note: ADA compliant height thermostat must be remote mounted | 10) High efficiency backward inclined impeller fan with variable speed EC motor |
| 4) 1" MERV 10 disposable filter (see page 31 for size) | 11) Electric heater (primary or auxiliary) |
| 5) Vertical centerline of coil connection run outs. Connections can be back, left, or right | 12) Top supply air opening (knock out) for attachment of ductwork |
| 6) Hose from drain pan to condensate riser. The reenforced rubber hose forms a running trap | 13) Control cable entry (for remote mounted thermostat) Note: ADA compliant thermostat must be remote mounted |
| 7) Double sloped drain pan insulated on under side | 14) Power cable entry point |

Compact Unit (top ducted for mechanical closets)

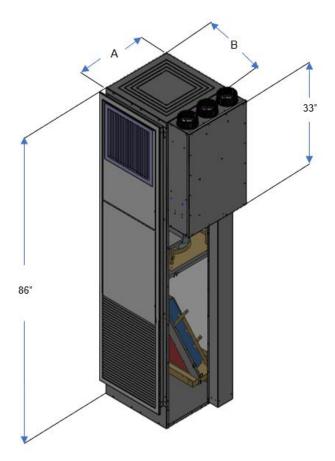


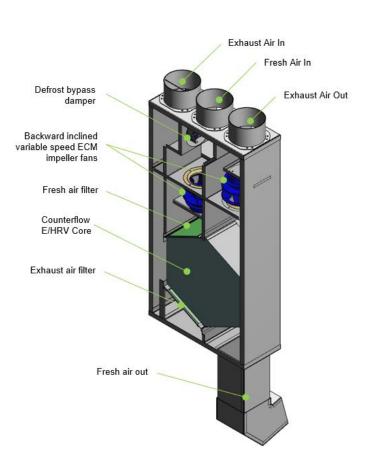
| Top Duct Connections | | | | |
|----------------------|----------------|--|--|--|
| Air Flow (CFM) | L x W (inches) | | | |
| 300 | 10 x 10 | | | |
| 400 | 12 x 12 | | | |
| 600 | 14 x 14 | | | |
| 800 | 14 x 14 | | | |
| 1000 | 16 x 16 | | | |
| 1200 | 16 x 16 | | | |

| 1) Top supply air opening for attachment of ductwork | 6) Hose from drain pan to condensate riser. The reenforced rubber hose forms a running trap |
|---|--|
| 2) Removeable motor/electrical enclosure access panel | 7) Chilled water coil (3 or 4 row) |
| 3) 1" MERV 10 disposable filter (see page 31 for size) | 8) Hot water coil (1 or 2 row) in 4-pipe units |
| 4) Back left or right riser connections (36" High) | 9) High efficiency backward inclined impeller fan with variable speed EC motor |
| 5) Vertical centerline of coil connection run outs. Connections can be back, left, or right | 10) Control and power cable entry (for remote mounted thermostat) (qty two 7/8" knockout located on both sides |
| | 11) Electric heating element (kW size varies by voltage) |

Integrated E/HRV Fan Coil Unit

Temspec continues to push the boundaries in our ultimate quest to achieve zero net energy in high rise buildings with our integrated counterflow core energy recovery vertical stacked fan coil unit. With a minimum sensible energy recovery efficiency of 80% at 60CFM in our HRV and minimum 65% total energy recover in our ERV, we lead the industry in both energy recovery modes. But what's the energy consumed in recovering this energy? While other manufacturers use PSC motors and forward curved fans, Temspec uses high efficiency backward inclined fans with variable speed ECM's which reduce the operating wattage by more than 50%. This coupled with our fan coil backward inclined supply fans with ECM's give us the lowest connected watts and highest energy recovery efficiency available on today's market





| Model | А | В | Weight* | | |
|-----------------|-----|-----|---------|--|--|
| 03 | 20" | 20" | 195 | | |
| 04 | 20" | 20" | 205 | | |
| 06 | 20" | 20" | 215 | | |
| 08 | 20" | 20" | 225 | | |
| 10 | 20" | 24" | 255 | | |
| 12 | 20" | 24" | 265 | | |
| *Without risers | | | | | |

Notes:

1/ E/HRV can be mounted on either side or back of fan coil and can be reversed so exhaust air in and out locations are reversed

2/ Risers cannot be located on same face as ${\rm E/HRV}$

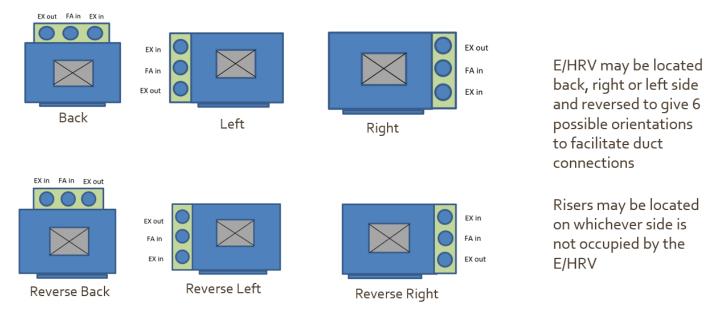
3/ Fan coil discharge air openings cannot be located on the same face as the risers or E/HRV 4/ Riser Stub-out height is 36"

5/ Single point power 7/8" knockout (both sides), 47" high

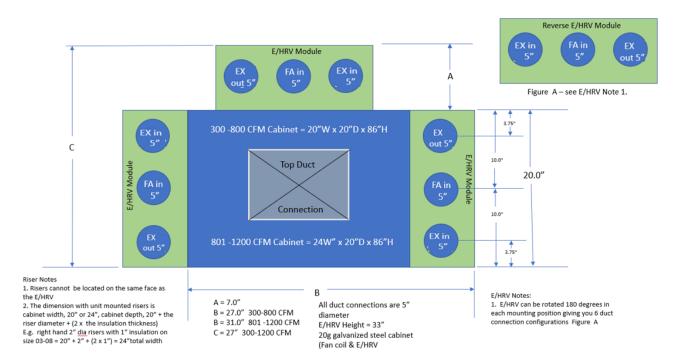
| Supply Fan Air flow CFM (L/s) | Supply Fan External Static Pressure inches W.C. (Pa) | Supply Fan Wattage | HRV Fan Air flow CFM (L/s) | HRV Fan External Static Pressure inches W.C. (Pa) | HRV Fan Wattage | Sensible Efficiency (Effective) | Total Unit Fan Wattage (HRV & Fan Coil) |
|-------------------------------------|---|--------------------------|----------------------------------|---|--------------------|---------------------------------------|---|
| Size 03 | | | | | | | |
| 300 (142) | 0.00 (00) | 20W | 20 (9) | 0.20 (50) | 20W | 90% | 40W |
| 300 (142) | 0.20 (50) | 35W | 20 (9) | 0.20 (50) | 20W | 90% | 55W |
| 300 (142) | 0.40 (100) | 50W | 20 (9) | 0.20 (50) | 20W | 90% | 70W |
| Size 04 | | | | | | | |
| 400 (189) | 0.00 (00) | 35W | 25 (12) | 0.20 (50) | 25W | 88% | 60W |
| 400 (189) | 0.20 (50) | 60W | 25 (12) | 0.20 (50) | 25W | 88% | 85W |
| 400 (189) | 0.40 (100) | 80W | 25 (12) | 0.20 (50) | 25W | 88% | 105W |
| Size 06 | | | | | | | |
| 600 (283) | 0.00 (00) | 60W | 40 (19) | 0.20 (50) | 30W | 84% | 90W |
| 600 (283) | 0.20 (50) | 90W | 40 (19) | 0.20 (50) | 30W | 84% | 120W |
| 600 (283) | 0.40 (100) | 125W | 40 (19) | 0.20 (50) | 30W | 84% | 155W |
| Size 08 | | | | | | | |
| 800 (376) | 0.00 (00) | 120W | 50 (24) | 0.30 (75) | 35W | 82% | 155W |
| 800 (376) | 0.20 (50) | 155W | 50 (24) | 0.30 (75) | 35W | 82% | 190W |
| 800 (376) | 0.40 (100) | 170W | 50 (24) | 0.30 (75) | 35W | 82% | 205W |
| Size 10 | | | | | | | |
| 1000 (472) | 0.00 (00) | 190W | 60 (28) | 0.40 (100) | 45W | 80% | 135W |
| 1000 (472) | 0.20 (50) | 240W | 60 (28) | 0.40 (100) | 45W | 80% | 285W |
| 1000 (472) | 0.40 (100) | 295W | 60 (28) | 0.40 (100) | 45W | 80% | 340W |
| Size 12 | | | | | | | |
| 1200 (566) | 0.00 (00) | 325W | 60 (28) | 0.50 (124) | 50W | 80% | 375W |
| 1200 (566) | 0.20 (50) | 395W | 60 (28) | 0.50 (124) | 50W | 80% | 445W |
| 1200 (566) | 0.40 (100) | 450W | 60 (28) | 0.50 (124) | 50W | 80% | 500W |

| Fan Coil & ERV Airflow vs Wattage & Effectiveness | | | | | | | | | |
|---|---|--------------------------|--|--|--------------------|---------------------------------------|-------------------------------------|------------------------------------|---|
| Supply Fan Air flow CFM (L/s) | Supply Fan External Static Pressure inches W.C. (Pa) | Supply Fan Wattage | ERV Fan Air flow CFM (L/s) | ERV Fan External Static Pressure inches W.C. (Pa) | ERV Fan Wattage | Sensible Efficiency (Effective) | Latent Efficiency (Effective) | Total Efficiency (Effective) | Total Unit Fan Wattage (ERV & Fan Coil) |
| Size 03 | | | | | | | | | |
| 300 (142) | 0.00 (00) | 20W | 20 (9) | 0.20 (50) | 20W | 85% | 77% | 80% | 40W |
| 300 (142) | 0.20 (50) | 35W | 20 (9) | 0.20 (50) | 20W | 85% | 77% | 80% | 55W |
| 300 (142) | 0.40 (100) | 50W | 20 (9) | 0.20 (50) | 20W | 85% | 77% | 80% | 70W |
| Size 04 | | | | | | | | | |
| 400 (189) | 0.00 (00) | 35W | 25 (12) | 0.25 (62) | 25W | 82% | 73% | 76% | 60W |
| 400 (189) | 0.20 (50) | 60W | 25 (12) | 0.25 (62) | 25W | 82% | 73% | 76% | 85W |
| 400 (189) | 0.40 (100) | 80W | 25 (12) | 0.25 (62) | 25W | 82% | 73% | 76% | 105W |
| Size 06 | | | | | | | | | |
| 600 (283) | 0.00 (00) | 60W | 40 (19) | 0.20 (50) | 30W | 76% | 64% | 69% | 90W |
| 600 (283) | 0.20 (50) | 90W | 40 (19) | 0.20 (50) | 30W | 76% | 64% | 69% | 120W |
| 600 (283) | 0.40 (100) | 125W | 40 (19) | 0.20 (50) | 30W | 76% | 64% | 69% | 155W |
| Size 08 | | | | | | | | | |
| 800 (376) | 0.00 (50) | 120W | 50 (24) | 0.30 (75) | 35W | 73% | 60% | 65% | 155W |
| 800 (376) | 0.20 (50) | 155W | 50 (24) | 0.30 (75) | 35W | 73% | 60% | 65% | 190W |
| 800 (376) | 0.40 (100) | 170W | 50 (24) | 0.30 (75) | 35W | 73% | 60% | 65% | 205W |
| Size 10 | | | | | | | | | |
| 1000 (472) | 0.00 (00) | 190W | 60 (28) | 0.40 (100) | 45W | 71% | 56% | 62% | 135W |
| 1000 (472) | 0.20 (50) | 240W | 60 (28) | 0.40 (100) | 45W | 71% | 56% | 62% | 285W |
| 1000 (472) | 0.40 (100) | 295W | 60 (28) | 0.40 (100) | 45W | 71% | 56% | 62% | 340W |
| Size 12 | | | | | | | | | |
| 1200 (566) | 0.00 (50) | 325W | 60 (28) | 0.50 (124) | 50W | 71% | 56% | 62% | 375W |
| 1200 (566) | 0.20 (75) | 395W | 60 (28) | 0.50 (124) | 50W | 71% | 56% | 62% | 445W |
| 1200 (566) | 0.40 (100) | 450W | 60 (28) | 0.50 (124) | 50W | 71% | 56% | 62% | 500W |

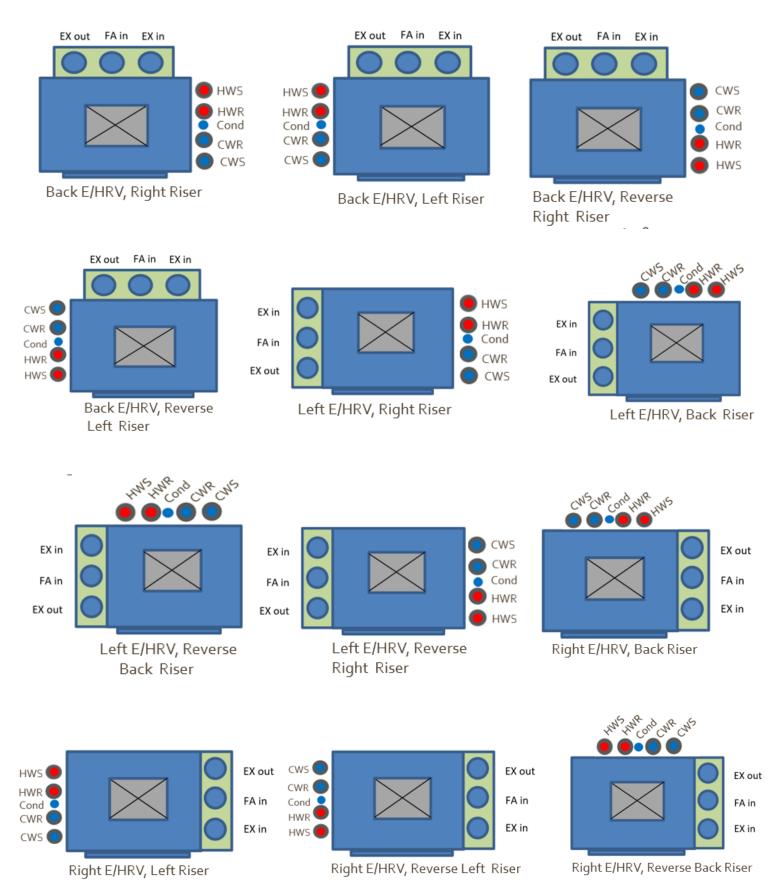
6 E/HRV Orientations for suite design flexibility



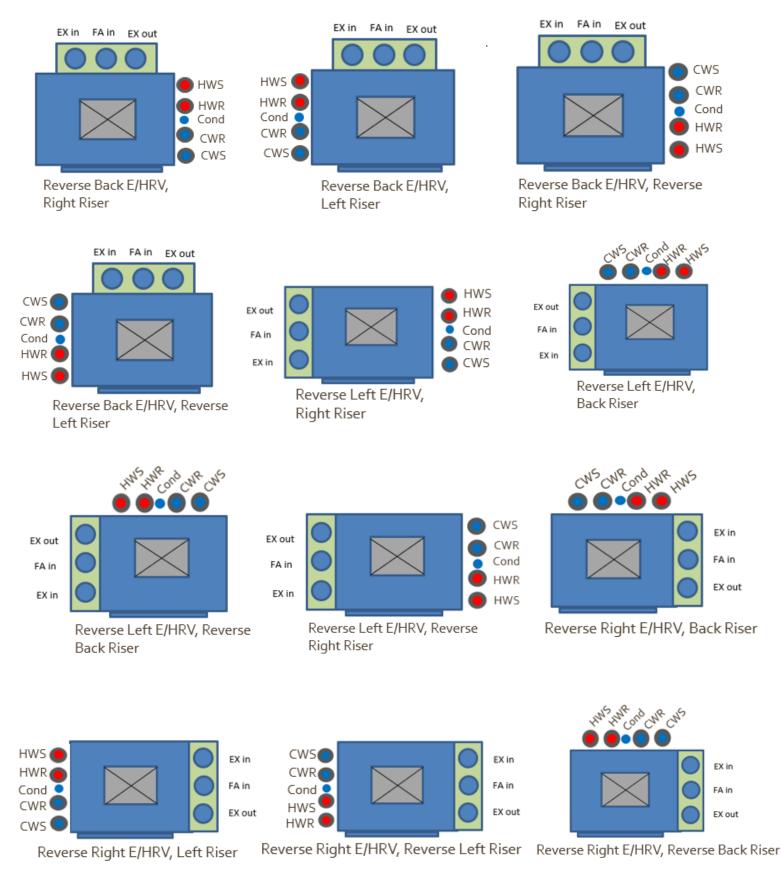
E/HRV Mounting Locations & Duct Connections



E/HRV Unit Location Options



Reverse E/HRV & Riser



| Fan Coil w E/HRV Electrical Data | | | | | | | |
|----------------------------------|---------|-----|-----|-----|--|--|--|
| Size | Voltage | FLA | MOP | MCA | | | |
| 03 - 04 | 120 | 2.3 | 15 | 2.9 | | | |
| | 208-240 | 1.7 | 15 | 2.1 | | | |
| | 277 | 1.7 | 15 | 2.1 | | | |
| 06 - 08 | 120 | 3.3 | 15 | 4.1 | | | |
| | 208-240 | 2.4 | 15 | 3.0 | | | |
| | 277 | 2.4 | 15 | 3.0 | | | |
| 10 - 12 | 120 | 4.0 | 15 | 5.0 | | | |
| | 208-277 | 3.2 | 15 | 4.0 | | | |

| E/HRV Physica | E/HRV Physical Data | | | | | |
|------------------|---|--|--|--|--|--|
| Dimensions | 33"H x 20"W x 7"D | | | | | |
| Weight | 45 lbs. | | | | | |
| Construction | 20 gauge galvanized sheet metal | | | | | |
| Insulation | 1/2" closed cell | | | | | |
| Filters | MERV 8 electrostatic washable | | | | | |
| Controls | Digital on-board, optional remote field mounted push button timers | | | | | |
| Sensors | 0-20,000 OHM Thermistors – E/HRV fresh air in and coil entering air | | | | | |
| Core | Washable polymer membrane - counter flow | | | | | |
| Duct Connections | 5" round | | | | | |
| Maximum Air Flow | 65 CFM @ 0.5" WC ESP | | | | | |
| Fans | 133mm variable speed backward inclined impeller with ECM | | | | | |

| HRV Performance (sensible energy recovery effectiveness) | | | | | | |
|--|------------------|------------------|--|--|--|--|
| Airflow (CFM) | Summer (Cooling) | Winter (Heating) | | | | |
| 20 | 90 | 90 | | | | |
| 25 | 88 | 88 | | | | |
| 30 | 86 | 86 | | | | |
| 40 | 84 | 84 | | | | |
| 50 | 82 | 82 | | | | |
| 60 | 80 | 80 | | | | |
| 70 | 79 | 79 | | | | |
| 80 | 78 | 78 | | | | |
| 90 | 77 | 77 | | | | |
| 100 | 76 | 76 | | | | |

| ERV Performance (sensible & latent energy recovery effectiveness) | | | | | |
|---|--------------------|------------------|--------------------|------------------|------------------------|
| Airflow (CFM) | Summer Sensible | Summer Latent | Winter Sensible | Winter Latent | Total Effectiveness |
| 20 | 85 | 77 | 85 | 77 | 80 |
| 25 | 82 | 73 | 82 | 73 | 76 |
| 30 | 80 | 69 | 80 | 69 | 73 |
| 40 | 76 | 64 | 76 | 64 | 69 |
| 50 | 73 | 60 | 73 | 60 | 66 |
| 60 | 71 | 56 | 71 | 56 | 62 |
| 70 | 69 | 54 | 69 | 54 | 59 |
| 80 | 67 | 51 | 67 | 51 | 57 |
| 90 | 65 | 49 | 65 | 49 | 55 |
| 100 | 64 | 47 | 64 | 47 | 53 |

Supply Air Opening Connection Dimensions

| | Supply Air Openings (Non ducted Units) | | |
|----------------------|--|--|--|
| | Single (any one side) | Double (any two sides) | Triple (any three sides) |
| 03 concealed cabinet | 12" x 12" | 12" x 6" | 12" x 6" |
| 04 concealed cabinet | 12" x 12" | 12" x 6" | 12" x 6" |
| 06 concealed cabinet | 14" x 12" | 14" x 8 | 14" x 5" |
| 08 concealed cabinet | 14" x 14" | 14" x 8" | 14" x 8" |
| 06 finished cabinet | 16" x 12" (front & back) 14" x 12" (left & right) | 16" x 8" (front & back) 14" x 8" (left & right) | 16" x 5" (front & back) 14" x 5" (left & right) |
| 08 finished cabinet | 16" x 14" (front & back) 14" x 14" (left & right) | 16" x 8" (front & back) 14" x 8" (left & right) | 16" x 8" (front & back) 14" x 8" (left & right) |
| 10 all cabinets | 16" x 14" (front or back) 14" x 14" (left or right) | 16" x 10" (front or back) 14" x 10" (left or right) | 16" x 8" (front or back) 14" x 8" (left or right) |
| 12 all cabinets | 16" x 14" (front or back) 14" x 14" (left or right) | 16" x 12" (front or back) 14" x12" (left or right) | 16" x 10" (front or back) 14" x 10" (left or right) |
| | One Grille Provided | One Grille & One Register Provided | One Grille & Two Register Provided |

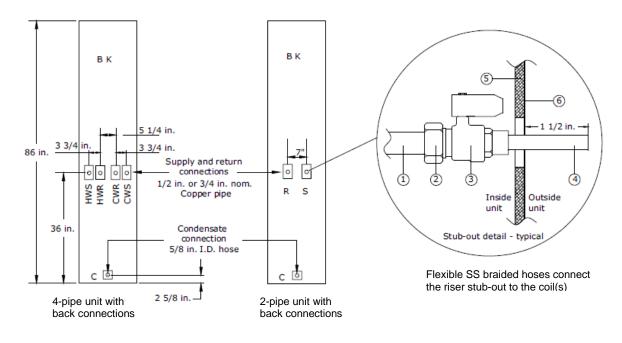
Note: E/HRV units can have only 2 openings in addition to the top

| | Supply Air Openings (Ducted Units) | | | | | | |
|-----|------------------------------------|---|--------------------|--|--------------------|---|-----------------|
| | 100% | One on unit & Top Duct | | **Two on unit & Top Duct | | Three on unit & Top Duct | |
| | Top Ducted | Register | Duct Connection | Register | Duct Connection | Register | Duct Connection |
| 03* | 10" x 10" | 12" x 6" | 10" x 10" | 12" x 6" | 10" x 10" | 12" x 6" | 10" x 10" |
| 04 | 12" x 12" | 12" x 6" | 10" x 10" | 12" x 6" | 12" x 10" | 12" x 6" | 10" x 10" |
| 06 | 14" x 14" | 16" x 8" (front or back) 14" x 8" (left or right) | 12" x 12" | 16" x 5" (front or back) 14" x 5" (left or right) | 10" x 10" | 16" x 5" (front or back) 14" x 5" (left or right) | 10" x 10" |
| 08 | 14" x 14" | 16" x 8" (front or back) 14" x 8" (left or right) | 12" x 12" | 16" x 8" (front or back) 14" x 8" (left or right) | 12" x 12" | 16" x 5" (front or back) 14" x 5" (left or right) | 10" x 10" |
| 10 | 16" x 16" | 16" x 8" (front or back) 14" x 8" (left or right) | 14" x 14" | 16" x 8" (front or back) 14" x 8" (left or right) | 12" x 12" | 16" x 8" (front or back) 14" x 8" (left or right) | 12" x 12" |
| 12 | 16" x 16" | 16" x 8" (front or back) 14" x 8" (left or right) | 14" x 14" | 16" x 10" (front or back) 14" x10" (left or right) | 12" x 12" | 16" x 5" (front or back) 14" x 5" (left or right) | 12" x 12" |

*ERV/HRV size 03 top supply air discharge opening is 12" x 12"

**Maximum two unit mounted supply air opening on E/HRV unit (risers and E/HRV occupy two faces)

Fan Coil Units without Risers



Riser Thermal Expansion

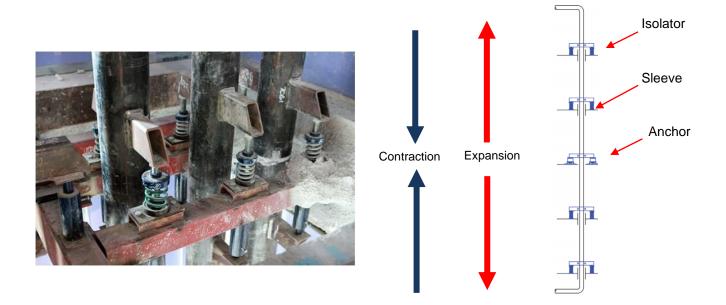
Anchoring risers subject to thermal expansion and contraction in hi-rise HVAC systems must be considered by the Design Engineer. Copper pipe expands or contracts at a rate of 1.2" (30.5mm) per 100ft (30.5m) per 100F (38C). Operating heating systems at lower temperatures, <140F, (60C), reduces both the volume and linear thermal expansion requirements and reduces thermal stress on all components. The expansion of a riser system operating at 160F in 20 story building will be 2.4".

Figure 1.0 illustrates a horizontal expansion system while figure 2.0 illustrate an in-line system. Figure 3.0 illustrates a full floating system which had gained popularity because there are no additonal potential failure components introduced to the piping system

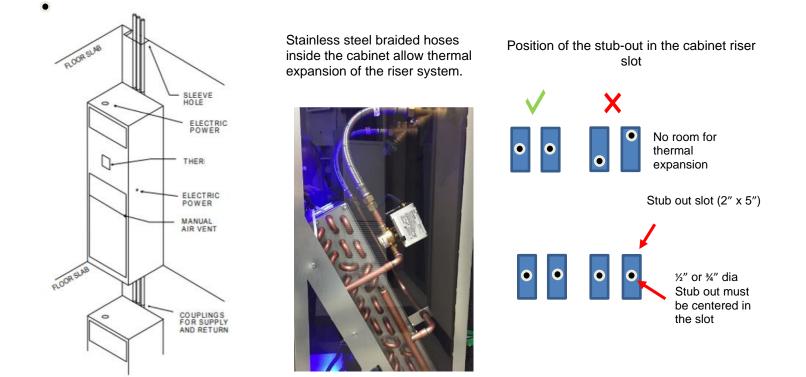


Fig. 1.0 Horizontal Thermal Expansion Loops

Fig 2.0 In-Line Rubber or Stainless Steel Thermal Expansion Compensators



Thermal Expansion in V-Stack Units



Temspec Inc. does not take responsibility for the riser support, anchoring, sizing, linear thermal expansion compensators, volume thermal expansion, or fire stop between floors or adjacent suites. Regardless of the thermal expansion device used in the riser piping, it is imperative that the riser stub-outs be centered in the cabinet stub-out slot at room temperature as shown. Refer to the installation manual for further guidance on riser expansion and anchoring (IMM 2020-01-02)

Riser Packages

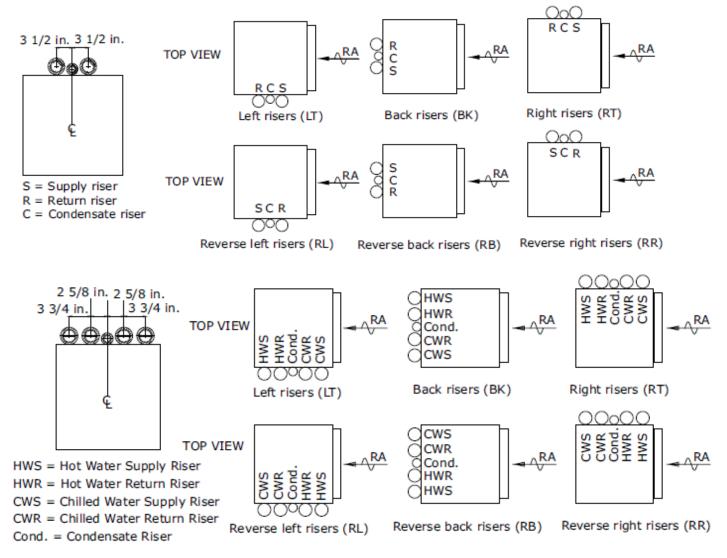
Factory- and field-installed risers

Insulated risers are available factory-installed on the units or can be shipped with or prior to the units for field installation. Isolation sweat ball valves are included with factory risers.

All copper risers are factory cut to a maximum 120" in length. Swaged connections for all supply and return risers are standard. Insulation meets or exceeds current flammability classification UL94. Insulation to cover swaged connections must be field provided.

- Supply and return risers are of type "L" copper in nominal 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2 & 3" diameters with 1/2" to 1.5" factory installed, closed cell flexible foam insulation
- · Insulation within cabinet height is standard. Full riser length insulation is an option
- Drain risers are type "M" copper (insulation included), in nominal 3/4", 1" or 1-1/4" diameter
- Optional L or K type copper is available

Note: Insulation thickness is limited on larger risers due to physical space available - consult factory



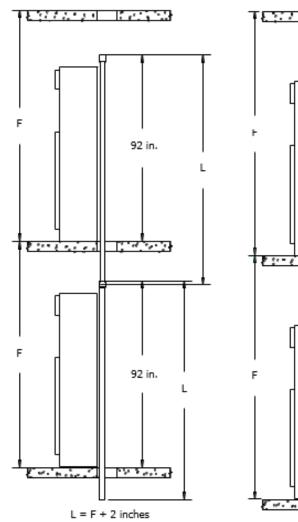
Reverse Riser orientations are used to aid in eliminating cross over piping when units on a riser stack change position from floor to floor or when two units share a come (primary/secondary) ve).

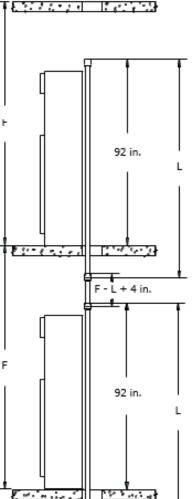


Risers are always sized based on the floor to floor height to ensure the proper assembly. To ensure proper alignment, the top of the riser is should always be positioned at a distance of 92" from the floor. This distance allows all risers to be properly sized based on the distance of L = F + 2", where the extra 2" allows for the riser to protrude to the floor below for connection.

Using the 92" height for installation allows the riser to be installed correctly on all floors, even when access to the stub out heights is not practical.

In the cases where the floor to floor distance is greater than the maximum riser pipe length, a spool piece can be added to make up the extra height needed. Standard Installation



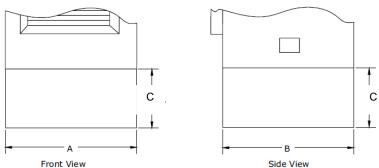


Standard Installation Using

Spool Pieces

Spool Piece Length = F - L + 4 inches L = F - Spool Length + 4 inches

Raised Base options



Available in 4-inch, 8-inch and 12-inch heights (shown)

Raised Base Dimensions (inches)

| Model | A | В | С |
|-------|----|----|------------|
| 03 | 16 | 16 | 4, 8 or 12 |
| 04 | 16 | 16 | 4, 8 or 12 |
| 06 | 20 | 18 | 4, 8 or 12 |
| 08 | 20 | 18 | 4, 8 or 12 |
| 10 | 24 | 18 | 4, 8 or 12 |
| 12 | 24 | 18 | 4, 8 or 12 |

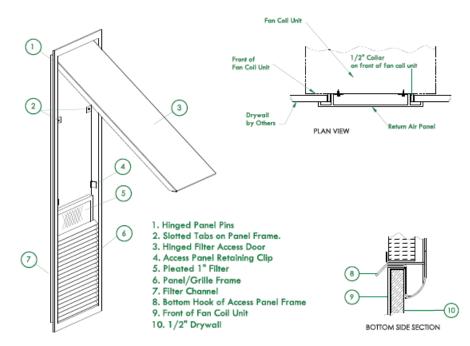
Notes:

1/ 8" raised based minimum required for factory installed condensate pump

2/E/HRV unit raised bases are 20W" x 20D" x 4",8", or 12" for sizes 03,04,06,08 units and 24W" x 20"D x 4", 8", or 12" for size 10, 12 units

Return Air Panels

Return Air Panel with Hinged Filter Access



Fan Coil Weights

| (Dry without risers or accessories) | | |
|-------------------------------------|-------------------|-------------------|
| Model | Concealed Cabinet | Finished Cabinet |
| 03 | 130 lbs. (59 kg) | 141lbs (64 kg) |
| 04 | 130 lbs. (59 kg) | 141 lbs. (64 kg) |
| 06 | 170 lbs. (77 kg) | 182 lbs. (84 kg) |
| 08 | 180 lbs. (82 kg) | 190 lbs. (86 kg) |
| 10 | 210 lbs. (95 kg) | 221 lbs. (100 kg) |
| 12 | 220 lbs. (100 kg) | 230 lbs. (104 kg) |

The weights are approximate. Risers, external sheet metal accessories and supply air grilles are not included in the weight

E/HRV Fan Coil Weights

(Dry without risers or accessories)

| Model | Concealed Cabinet |
|-------|-------------------|
| 03 | 186 lbs. (84 kg) |
| 04 | 186 lbs. (84 kg) |
| 06 | 227 lbs. (103 kg) |
| 08 | 227 lbs. (103 kg) |
| 10 | 255 lbs. (116 kg) |
| 12 | 265lbs. (120 kg) |
| | |

The weights are approximate. Risers, external sheet metal accessories and supply air grilles are not included in the weight

Fan Coil Filter Sizes

| (MERV 10) (W X H X D) | | |
|----------------------------------|-----------------------------|-------------------------------|
| Model | Concealed Cabinet | Finished Cabinet & E/HRV Unit |
| 03-04 | 12" x 20" x 1" | 14" x 20" x 1" |
| 06-08 | 14" x 25" x 1" | 16" x 25" x 1" |
| 10-12 | 16" x 25" x 1" | 16" x 25" x1" |
| Standard filter is 1.0" MERV 10. | 1.0" MERV 8 to 13 available | |

Humidity Control (Without Reheat)

One of the advantages of using a variable speed ECM fan is their ability to operate very efficiently are low speeds. The standard thermostat PI control algorithm slows the fan speed to 20%, (adjustable) as it reaches the temperature setpoint before closing the chilled water valve. This low air flow coil decreases the SAT which decreases the grains of moisture. The low air velocity, less than 50 FPM, does create drafts so there is no occupant discomfort. The lower SAT offers 71% more dehumidification than the standard fan coil ECM and forward curved fan.

| Leaf Fan Coil | Conventional Fan Coil |
|----------------------------|--------------------------|
| SAT = 50F | SAT = 55F |
| RAT = 75F | RAT = 75F |
| RAH= 60% | RAH = 60% |
| Grains Removed = $78 - 54$ | Grains Removed = 78 - 64 |
| = 24 | = 14 |

The Leaf unit offers 71% more dehumidification making it an ideal alternative for applications where reheat was used.

Retrofit Package

There is no good time to retrofit a hotel suite so minimizing the disruption to guest occupancy is a top concern. Temspec has developed a unique package where the old unit can be removed, and a new high efficiency LEAF unit be installed without losing a day's revenue.

Speak to Temspec sales representative to learn more about this quick retrofit solution.





S/A grille, and drywall



Remove Unit



Slide in the Leaf and install full face panel

- Small footprint
- 16" x 16" (Model 03-04)
- Highest motor efficiency 28.5 Watts (325CFM)
- Finished Full Face panel means no drywall or painting



Warranty

Free replacement parts will be provided by the Company in the event any product supplied by the Company proves defective in material or workmanship for a period of eighteen (I8) months from the date of shipment. Labor to replace the part is covered by the installing contractor. Temspec may request the failed component to be returned for analysis or examination. Any component found to fail due to improper maintenance or operation will be not covered under our warranty program.

Measures to avoid non warranty claims are:

- 1) Store the fan coil unit in conditioned space protected from dust and moisture while waiting for installation
- 2) Keep unit protected from dust and moisture after installation
- 3) Do not operate the fan coil unit during construction construction dust can be harmful to filters, motors, and electrical components
- 4) Flush the chilled and hot water systems before opening isolation valves to the units
- 5) Operate the unit with treated water only fresh water may damage piping components
- 6) Do not use chlorine or ammonia-based cleaning products on the fan coil units to avoid corrosion
- 7) Thoroughly flush the coil and drain pans after cleaning to avoid corrosion
- 8) Do not exceed the design chilled and hot water operating temperatures

| | LEAF Fan Coil S | pecifications | Ι | |
|--|--|---|--|--|
| | Model TLG-03-04 | Model TLG - 06-08 | Model TLG-10-12 | |
| *Dimensions | 86"H x 16"W x 16"D 2133mmH x 406mmW x 406mmD | 86"H x 20"W x 18"D 2133mmH x 508mmW x 457mmD | 86"H x 24"W x 18"D 2133mmH x 609Wmm 457mmD | |
| MAX Airflow | 100-400CFM, (47 - 189I/s) | 200-800CFM, (94 - 378l/s) | 300-1200CFM, (142 - 566l/s) | |
| MAX ESP @ design airflow | 0.2" WC, (50pa) | 0.4" WC, (100pa) | 0.4' WC, (100pa) | |
| *Weight | 170lbs, (59kg) | 170lbs, (77kg) | 210lbs, (95kg) | |
| Cooling | | Hydronic | | |
| Heating | | Hydronic, Electric | | |
| Construction | | 20 Gauge galvanized metal | | |
| Insulation | | re with Acrylic facing, 1/2" (12mn | n) Closed Cell | |
| Condensate Drain | Polymer or 304 Stainless Steel | Acrylic coated galvanized or 304 Stainless Steel | Acrylic coated galvanize or 304 Stainless Steel | |
| Filter | 12" x 20" x 1" MERV 10 | 14" x 25" x 1" MERV 11 | 16" x 25" x 1" MERV 1 | |
| Coils | 0.0045" aluminum fins mechanically boded to 1/2" diameter x 0.015" copper tube. 18 gauge galvanized or optional 304 SS coil casing | | | |
| Voltage | 100-130VAC, 200-240VAC, 277VAC | 100-130VAC, 200-240VAC, 277VAC | 100-130VAC, 200-277V | |
| Disconnect switch | Yes | | | |
| Piping packages | shut-off valve, strainer, manual or autoflow balancing valve, pressure independent control (PIC), stainless braided hoses | | | |
| Control Valves | 2-way, 3-way, 6-way, 2 p | osition, 0-10VDC modulating, floa | iting point control, | |
| Fresh air Opening | 4"H x 6 | "W, manual or motorized dampe | r | |
| Raised Bases | 4.0", 8.0", 0 | r 12.0" High, with optional access | door | |
| Condensate pump | | al with 8.0" or 12.0" H raised base | | |
| Fan Motor | | Variable Speed ECM | - | |
| Operating Temp Range | -25C to | +60C -13F to 140F | 1 | |
| Fan Speed Control Input | 0-10VDC | 0-10VDC | 0-10VDC | |
| ECM Output | 0-10VDC, 10mA | 0-10VDC, 10mA | 0-10VDC, 10mA | |
| Soft Start | | Yes | | |
| Motor Current Limit | | Yes | | |
| Power Limiter | | Yes | | |
| Thermal overload protection | | Yes | | |
| Under voltage Protection | Yes | | | |
| Integrated PID Controller | Yes | | | |
| Unit Mounted Risers | 3/4" to 3.0" Type M or L Copper | | | |
| Riser Insulation See page 27 for E/HRV Fan Coil | 1/2" to 1.5" Fibreglass, Polyolefin, | | ckness restrictions based | |

*See page 27 for E/HRV Fan Coil weights & dimensions

Mechanical Specifications (Guide Spec)

Certifications

Performance: Unit performance is certified by AHRI in accordance with ANSI/AHRI 440-2008: Performance Rating of Room Fan-Coils

Safety: All standard units are agency listed in the United States and Canada and comply with the requirements of the current editions of UL 1995/C22.2 No. 236.

Construction

The cabinets shall be fabricated from 20 gauge steel lined with 1" inch fiberglass insulation bonded with a thermosetting resin or grip nails and coated on the airstream side with an acrylic facing. In addition, there is an option available for $\frac{1}{2}$ - inch closed cell cabinet insulation.

The drain pan shall be 100% corrosion resistant polymer, galvanized acrylic coated steel, or 304 stainless steel positively sloped in two directions towards the outlet. The stainless steel, and acrylic coated galvanized drain pan shall be insulated on the underside with ½-inch closed cell insulation. The drain hose from the outlet to the condensate riser shall form a running trap. An optional float switch will close CW control valve upon detection of high-water level in condensate drain pan.

Fan & Motor

Variable speed backward inclined impeller fan with integrated electronically commutated motor, (ECM). Fan must have an over-all minimum efficiency of 58%. Forward curved fans and/or PSC motors cannot be accepted

The fan motor shall be an electronically commutated, EC brushless, type with sealed bearings. All motors have a maximum ambient operating temperature of 140°F and are permanently lubricated. The motor can accept a 0-10VDC signal configured to deliver the specified airflow with no special tools. PSC motors cannot be accepted. Fan wattage listed in schedule must not be exceeded.

Disconnect

An unfused service disconnect switch shall be included, mounted inside the unit behind the motor cover.

Coils

The coil shall have $0.0045" \pm 0.0005"$ aluminum fins mechanically bonded to ½-inch diameter with minimum 0.015" tube wall copper tube. The coil shall be factory pressure tested at no less than 300 PSIg. A manual air vent shall be incorporated at the high point of the coil.

Piping Packages

The piping package shall include: Ball type shut-off valves at the coil supply and return (combined with manual or automatic balancing valves or strainers when used), and a two- or three-way control valve with 24V two-position, modulating 0-10 VDC, 3 wire floating point, pressure independent actuator. Chilled water valves are normally closed and heating water valves normally open. Valves are installed at the coil return.

Electrical Heat

Units with electric heat shall have single power connection and be wired for single-stage operation with an open wire nickel-chrome element. An auto-reset high limit device shall be included.

Filters

A one inch MERV 10 disposable filter shall be shipped loose with return air access panel.

Units equipped with 1.0" inch MERV 10 filters have a rating based on ASHRAE Standard 52.2. The average dust spot efficiency is no less than 35 to 40 percent when tested in accordance with ASHRAE 52.1 atmospheric dust spot method.

Controls

The fan coil manufacturer shall supply a low voltage (24V) digital programmable thermostat with remote sensor and energy savings contacts option for remote mounting, or unit mounted. The thermostat has a PI 0-10VDC fan output control and 2 binary outputs for 2 position NO or NC valve control. Remote mounted thermostats are connected to a terminal strip that is mounted inside the unit. The thermostat is shipped loose for installation after the unit is installed, dry wall is applied, and the walls are painted. An optional thermostat with analog valve control, 0-10VDC fan control, and BACnet compatible is available as an option.

Riser Package

Risers from 3/4" to 3.0" are available in both type "L" and type "M" copper for supply, return and condensate. Riser insulation is available in ½-inch to 1.5" wall thickness for closed cell foam (polyolefin), closed cell elastomeric (similar to

Armaflex®) or fiberglass (wrapped with vapor barrier). Insulation thickness shall comply with ASHRAE 90.1.

Riser diameter and insulation thickness are subject to physical limitations. Contact Temspec on 4-pipe risers larger than 2.0 inches in diameter. The risers shall have an approximately 3.0 inch swaged expansion at the top end to allow a 3.0 inch insertion of the riser from above without the use of couplings. Risers may be provided plain ended in lieu of swaged for field supplied/installed fittings (similar to Pro-Press®).

The riser insulation shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less in compliance with ASTM E 84. The insulation shall be continuous over the riser length within the height of the cabinet. Provision for insulation beyond the ends of the cabinet shall be the responsibility of the installing contractor.

The specification of riser anchoring, expansion loops and fire stopping requirements are not detailed in this specification and are not part of the Temspec fan coils scope.

Return Air Access Panel

The return air access panel shall have a fixed blade return air grille in the lower portion with a hinged panel filter access on concealed units. The return air panel installs flush on to the drywall which has been applied directly to the front of the unit. The panel is of stamped steel construction and shall be finished in standard white baked enamel. The panel secured to the unit by a hook on the bottom edge and sheet metal fasteners to the cabinet. The panel is shipped loose for installation after the unit is installed, dry wall is applied, and the walls are painted.

There is optional full-face panel designed to cover the entire opening for retrofit applications available in sizes from 86" -94" high x 18" - 22" wide.

Supply Air Grilles and Registers

Supply air grilles and registers shall be provided for unit mounting locations. The grilles shall be steel, have double deflection airfoil blades and shall be finished in standard white baked enamel.

The grilles shall attach to the collar of the fan coil unit by spring clips. When a unit has more than one supply air opening a balancing damper (horizontal in the front) is included with the grille (register) to balance the air flow (screw holes optional). Any supply air grilles which are part of supply air ductwork shall be provided by the sheet metal contractor. Grilles are shipped loose for installation after the unit is installed, dry wall applied, and the walls are painted.

A line-of-sight baffle with acoustical wrap shall be included in units which have left and right or front and back supply air openings.

There is also an option to upgrade the supply air grille material to aluminum as well as the option to provide custom colors for return air panels and supply air grilles/registers.

Supply grilles and or registers are factory mounted on finished cabinet models.

Fresh Air Openings

Fresh air openings shall be 4" round or 6" x 4". Fresh air opening shall have manual damper. Fresh air opening shall have motorized damper and freeze protection.

Integrated ERV/HRV

ERV shall be AHRI certified and provide minimum 70% sensible recovery and 60% latent recovery at 60CFM using polymer membrane washable core that blocks VOC's, CO2, and other gases & contaminants. HRV core shall be AHRI certified under standard 1060 and provide minimum 80% sensible recovery using a polymer washable core. Fresh air and space exhaust air shall be filtered using minimum MERV 8 washable filter. Energy recovery module shall incorporate two fans with independent variable speed control for system balancing. Fans to be backward inclined type with variable speed ECM capable of supplying 90CFM @ 0.5" W.C. ESP. Forward curved fans and PSC motors will not be accepted. ERV shall be equipped with freeze protection and operate down to -4F (-20C). Core shall be tested to UL723 verifying s maximum flame spread index (FSI) of 25 and maximum smoke developed index (SDI) of 50.

Raised Bases

Raised base shall be of 4 inches, 8 inches or 12 inches in height. Provide access panel in the 8 inch and 12 inch bases when a condensate pump is supplied.

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