









... 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 finish
- 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

C - recovery core

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 - requires a changeover sensor)

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. Function (cooling only, changeover, etc.) is handled in positions 15 and 16 of the model number. 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
- 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
- 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

- 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 by Others
- K 3 speed fan control, Thermostat by Others
- C <u>Johnson Controls T701DFP-4</u> 3 speed fan control, Manual Changeover, Programmable, NC 2-position valves
- D <u>Honeywell TB7100A</u> 3 speed fan control, Auto Changeover, Programmable, NC 2-position valves
- E <u>Johnson Controls T701DFN-4</u> 3 speed fan control, Manual Changeover, Non-Programmable, NC 2-position valves
- F <u>Honeywell TB8575</u> 3 speed fan control, Auto 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
- N <u>Viconics VT8350</u> 0-10 vdc speed control, Digital programmable *auto changeover*, on/auto fan speed, NO or NC modulating or 2 position or floating-point valve control and BACnet (programming on site is required, all software and instructions will be included)
- P <u>Viconics VT8350</u> 0-10 vdc speed control, Digital programmable *manual changeover*, on/auto fan speed, NO or NC modulating or 2 position or floating-point valve control and BACnet (programming on site is required, all software and instructions will be included)
- A <u>Viconics VT7350C</u> 3 speed fan control, Digital programmable, *auto changeover*, on/auto fan speed, NO or NC 2 position or floating-point valve control and BACnet
- B <u>Viconics VT7350C</u> 3 speed fan control, Digital programmable, *manual changeover*, on/auto fan speed,
 NO or NC 2 position or floating-point valve control and BACnet

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
- M 2-pipe, Floating, NO, SR
- N 2-pipe, Floating, 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
- U 4-pipe, Floating, NO, SR
- V 4-pipe, Floating, NC, SR
- W 4-pipe, Floating CW NO, HW NC, SR
- Z 4-pipe, Floating CW NC, HW NO, SR

Note: SR=spring return, FL=fail last. All valves are 24VAC. Select "S" for Digit 30 for any other options which are not listed above. Temspec shall be consulted for any "Special" options before we can accept the order.

Digit 28 - Thermostat & Insulation

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

Digit 31 - Spacer

Digits 32,33 - Supply Air Opening(s)

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

- Y -No grill openings
- V Top duct connection

- Z No top duct connection
- 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
- TI I TOTIL and baci
- J Left and right
- K Back & left
- L Back & right
- M Top opening only

Example: top duct and front = VA

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. Stub-out height

is 36". Consult factory for specials

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

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 240v 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

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 Free blow
- 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:

 $6th\ floor = 06$,

 $35th\ floor = 35$

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

Specials

- 1. 6-way valve
- 2. PIC Valve(s)
- 3. SS coil casing
- 4. Low temperature protection
- 5. non-standard colored grill
- 6. 1 year extended warranty (parts only)7. Outdoor air opening
- 8. Outdoor air with manual damper
- 9. Outdoor air 2-position damper actuator

What makes us Better?

High Efficiency ECM Impeller Fans



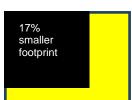


100-400 CFM

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 more 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 guick 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

Swaged Riser Ends

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



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

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
06	4 Row cooling/ 14 FPI	600	21.9	14.6	5.1	15.4	66
00	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
	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
12	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 Capacities

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.

Cabinet 03-04

			En	tering Wa	ter Temp.	140°F					
S	Size/ model	Total Capacity (MBH)	WPD (ft H2O)	LWT (°F)	Total Capacit y (MBH)	WPD (ft H2O)	LWT (°F)	Total Capacity (MBH)	WPD (ft H2O)	LWT (°F)	
CFM Row(s) Heating		1.0 GPM			2.	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	19.0	1.6	126	
			En	tering Wa	ter Temp.	160°F					
S	Size/ model	Total Capacity (MBH)	WP D (ft H2 O)	LWT (°F)	Total Capacit y (MBH)	WPD (ft H2O)	LWT (°F)	Total Capacit y (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	
				tering Wa	ter Temp.	180°F					
S	Size/ model	Total Capacity (MBH)	WP D (ft H2 O)	LWT (°F)	Total Capacit y (MBH)	WPD (ft H2O)	LWT (°F)	Total Capacit y (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	0.7	147	17.0	2.4	161	17.6	4.8	166	
300	2-Row Heating	20.2	0.2	136	23.7	0.7	154	25.0	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	0.2	130	28.8	0.7	149	30.3	1.5	158	

Heating Capacities

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.

Cabinet 06-08

			Enter	ing Wate	r Temp. 140					
	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	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
			Enter	ing Wate	r Temp. 160	°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	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
			Enter	ing Wate	r Temp. 180	°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	8.0	153	33.0	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

Temspec Inc. www.Temspec.com Toll Free 888-836-7732 Leaf Cat. 2021-12-22

Heating Capacities

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.

Cabinet 10-12

			E	ntering 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		2.5 GPM		3.	5 GPM		4.5 GPM		
1000	1-Row Heating	24.4	1.1	119	26.4	2.0	124	27.6	3.0	127
1000	2-Row Heating	36.8	2.3	108	40.2	4.0	115	42.2	6.2	119
1200	1-Row Heating	26.5	1.1	117	28.9	2.0	122	30.4	3.0	125
1200	2-Row Heating	39.9	2.3	105	44.2	4.1	112	46.8	6.3	117
	1		E	ntering W	ater Temp. 1	60°F	1	ı		
,	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			5 GPM			4.5 GPM	
1000	1-Row Heating	31.9	1.0	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	6.0	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	6.0	130
	1			Entering	Water Temp	. 180°F	1	ı		
	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	1.0	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	1.0	142	46.0	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

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.

				Duct	ed D	isch	arge)			
					1/	3 Octave E	Band Frequ	iencies (Hz	:)		
			63	125	250	500	1000	2000	4000	8000	A-wt. (dBA)
Model	CFM	ESP				Sou	ind Power,	dB			
03-04	175	0.0	65	52	40	37	34	28	26	32	43
	225	0.0	66	54	46	39	34	29	26	32	45
	300	0.0	66	57	49	42	35	30	27	32	47
	350	0.0	67	60	53	45	35	30	27	32	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
	000	0.2	12	00	00	- 30	70		- 01		02
10-12	700	0.0	70	65	53	46	38	32	28	32	52
10-12	800	0.0	69	65	57	50	41	34	30	32	54
	900	0.0	72	66	60	53	44	36	33	32	56
	1000	0.0	72	68	63	55	47	39	36	33	58
	1100	0.0	74	70	66	58	50	42	39	35	61
	1200	0.0	75	70	68	61	52	45	52	37	63
	600	0.0	67	63	52	45	37	31	29	32	50
	700	0.2	69	65	56	49	40	33	30	32	53
		0.2	71	65	59	51		35	33	33	55
	800	0.2	71	67	62		43	38	35	33	55
	900					54	46				
	1000	0.2	73	70	65	57	48	40	37	34	60
	1100	0.2	79	69	67	61	50	43	40	36	63
	1200	0.2	77	70	71	62	53	46	43	38	65

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

	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
Model	Volts/ph./Hz		Heater Amps											
	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	1	4.2	6.3	8.3	10.4	12.5	14.6	16.7	18.8	20.8	25.0	-	-
	277V/1/60	1	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

Amps = Watts Volts

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

CFM CFM

S.A = Supply Air

FLA = Full Load Amps

= S.A fan motor Amps + Electric Heater Amps

MCA = Minimum Circuit Ampacity

 $= FLA \times 1.25$

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

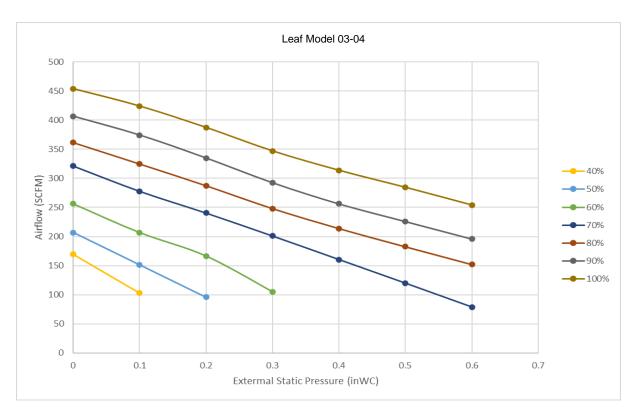
- If the value of the calculated rating does not equal standard current rating of overcurrent protective device, the marked maximum rating shall be the next lower standard rating.
- Exception No. 1: The marked maximum rating of the overcurrent protective device shall be the standard rating next higher 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.

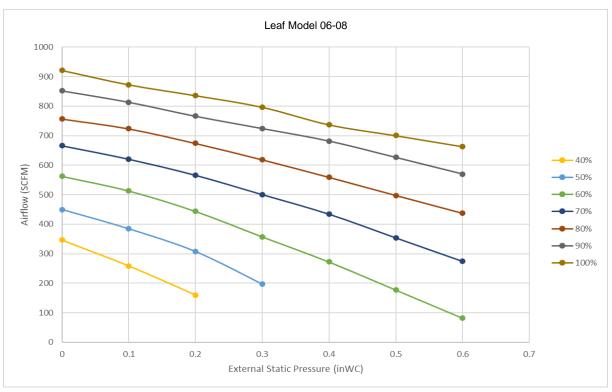
Motor Data (ECM 0-10VDC Control Signal)

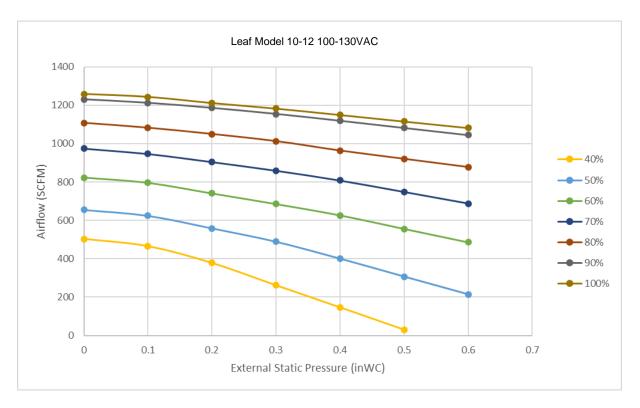
Model	Connection Voltage Volts/ph./Hz		CM ate Data Amps	FLA Amps	MOP Amps		Model	CFM*	Watts* (Free discharge)
	120V/1/60	85	1.3	1.63	15			220	14
03	208-240V/1/60	80	0.7	0.88	15		03	272	21
	277V/1/60	80	0.7	0.88	15			*300	29
	120V/1/60	85	1.3	1.63	15			328	32
04	208-240V/1/60	80	0.7	0.88	15		04	370	44
	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
00	120 V/ 1/00	103	2.5	2.00	13		00	658	74
08	208-240V/1/60	168	1.4	1.75	15		08	743	107
	277V/1/60	168	1.4	1.75	15			*800	142
	400)//4/00	245	2.0	2.75	4.5			667	67
10	120V/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		<i>L.L</i>	2.70	10			*1000 768	177
	120V/1/60	345	3.0	3.75	15			823	97 107
12						\dashv \mid	12	1081	196
	200-277V/1/60	500	2.2	2.75	15			*1200	282

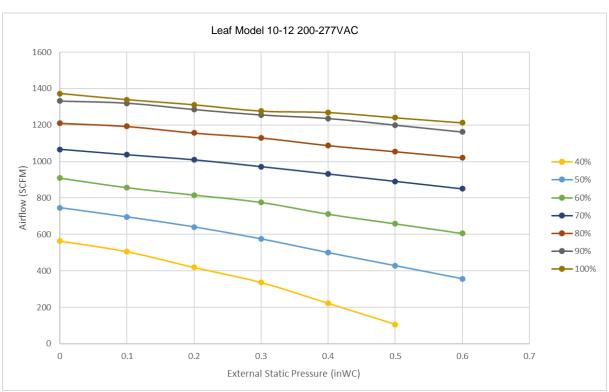
^{*}AHRI certified operating points. Other CFM readings recorded during factory performance testing

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, loT 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.

Piping Components

Temspec offers extensive control and piping package options including isolation valve, strainer, circuit balancing valve, stainless steel flexible hoses and control valve. Control valves are 24VAC and can be 2 -position or modulating, 2-way, 3-way, or 6-way, and pressure independent (PIC) Manual or auto flow circuit balancing valves can be selected.

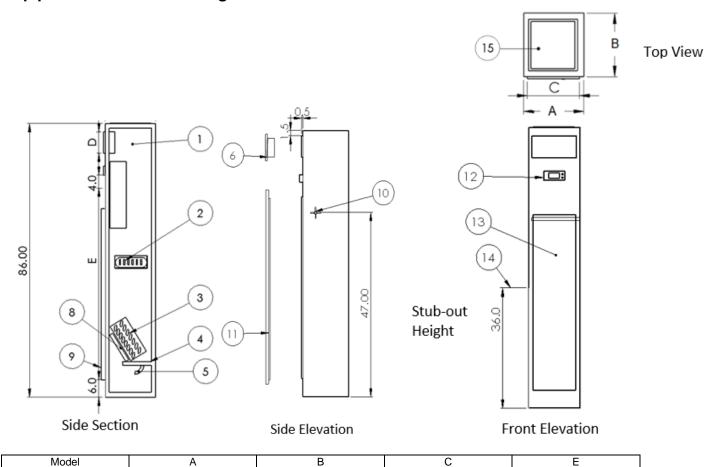
DZR Brass — Temspec uses DZR brass in our isolation valves, strainers and circuit balancing valves which has a different composition making it more resistant to dezincification (corrosion) which is one of the leading causes of Stress Corrosion Cracking SCC. This type of brass falls under the general specification of ASTM B283 but the material specification is C5330 vs the industry standard C37700. Simply stated, DZR brass offers our customers more protection against corrosion which can lead to leaks or premature failure

Concealed Fan Coil Unit Dimensions

2-pipe Chilled Water-Cooling Unit

14 inches.

8) 1" (one inch) MERV 10 disposable filter.

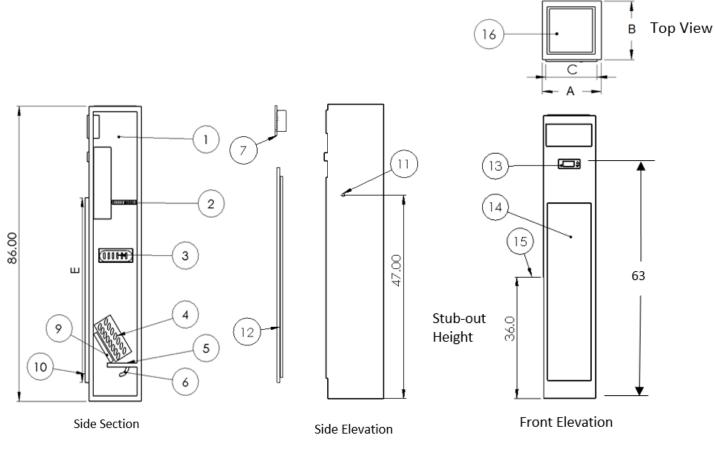


03	16	1	6	12	52		
04	16	1	6	12	52		
06	20	1	8	14	52		
08	20	1	8	14	52		
10	24	1	8	16	54		
12	24	1	8	16	54		
insulation coated on a optional.	inet, lined with 1-inch air side; ½" -inch closed	d-cell foam	of drywall t				
2) Variable Speed EC Fan (0-10VDC Fan Sp	Motor, Backward Incline eed Signal)	ed Impeller	control cable entry points on all units. See CLCH-SVX021A-EN installation manual for details.				
3) Chilled Water Coil; I	Hot Water changeover o	ptional.	11) Hinged return air grille/access panel.				
, ,	(black polyester powder) el or ABS positively slo outlet.		12) Unit mounting location for thermostat/controller				
5) Drain Hose from d flexible hose forms a re	rain pan to condensate unning trap	riser. The	13) Fan shield, acoustically lined. Identification and safety caution labels are affixed to this panel.				
back or any combin	steel supply air grille at nation when there ar D" varies with CFM: 5, 8	ere are multiple Connections are at the back, left or right sides of the ur					

ductwork.

15) Top supply air opening (knock out) for attachment of

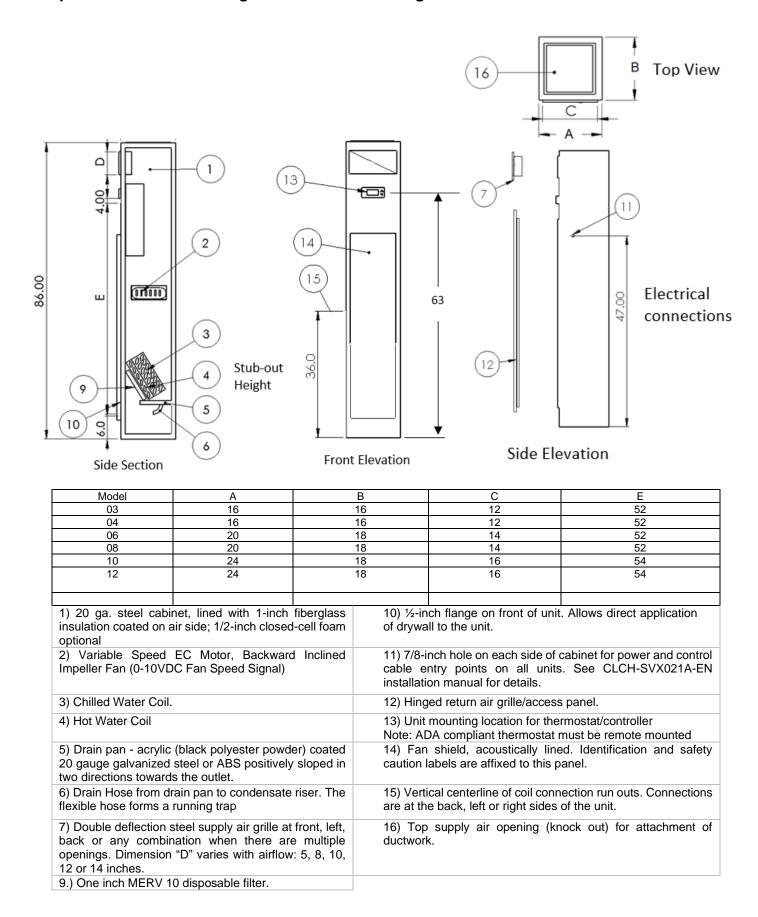
2-Pipe Chilled Water-Cooling Unit with Electric Heat



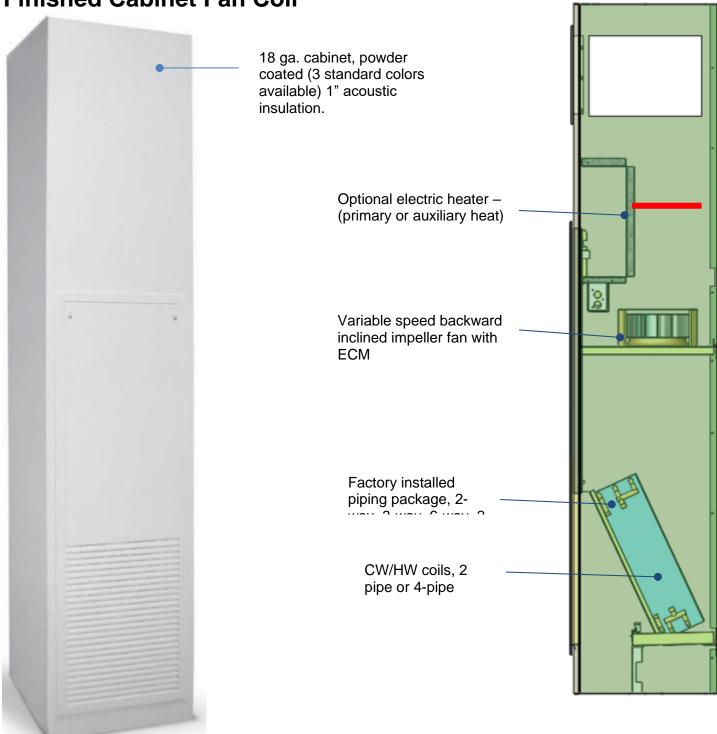
Model	A	В	С	Е
03	16	16	12	52
04	16	16	12	52
06	20	18	14	52
06	20	18	14	52
10	24	18	16	54
12	24	18	16	54

1) 20 ga steel ashingt lined with 1 inch fiberglass	10) 1/ inch flange on front of unit. Allows direct
1) 20 ga. steel cabinet, lined with 1-inch fiberglass insulation coated on air side; 1/2 -inch closed-cell foam optional	10) ½-inch flange on front of unit. Allows direct application of drywall to the unit.
2) Electric Heater (Primary or auxiliary)	11) 7/8-inch hole on each side of cabinet for power and control cable entry points on all units.
3) Variable Speed EC Motor, Backward Inclined Impeller Fan (0-10VDC Fan Speed Signal)	12) Hinged return air grille/access panel.
4) Chilled Water Coil; hot water changeover optional.	13) Unit mounting location for thermostat/controller. Note: ADA compliant thermostat must be remote mounted
5) Drain pan - acrylic coated 20 gauge galvanized steel or SS or polymer positively sloped in two directions towards the outlet.	14) Fan shield, acoustically lined. Identification and safety caution labels are affixed to this panel.
6) Drain Hose from drain pan to condensate riser. The flexible hose forms a running trap	15) Vertical centerline of coil connection run outs. Connections are at the back, left or right sides of the unit.
7) Double deflection steel supply air grille at front, left, back or any combination when there are multiple openings. Dimension "D" varies with airflow: 5, 8, 10, 12 or 14 inches.	16) Top supply air opening (knock out) for attachment of ductwork.
9) One inch MERV 10 disposable filter.	

4-Pipe Chilled Water Cooling and Hot Water Heating Unit

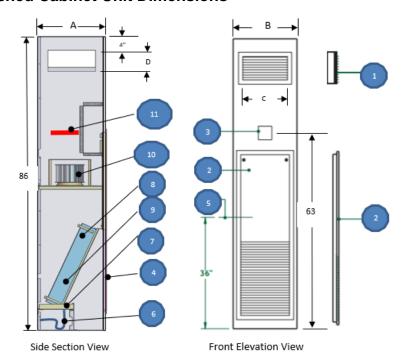


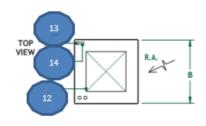
Finished Cabinet Fan Coil



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 remoted mounted. Power and control cable entry is on the top of unit.

Finished Cabinet Unit Dimensions

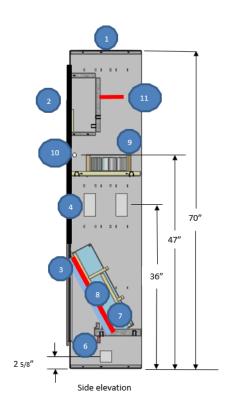




Model	Α	В	С
03	18"	18"	14"
04	18"	18"	14"
06	20"	20"	16"
08	20"	20"	16"
10	20"	24"	16"
12	20"	24"	16"

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			

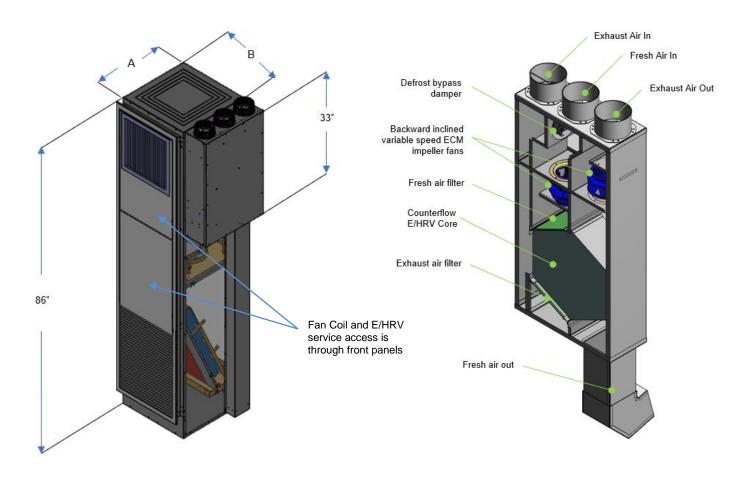
Note: footprint is the same as concealed unit for each cabinet size

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)	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 or

ECM 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 backward inclined supply fans with ECM's give us the lowest connected watts and highest energy recovery efficiency available on today's market. In other words, the lowest net energy consumed



Model	Α	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 the back of fan coil and can be reversed so exhaust air in change locations for a total of six configurations
- 2/ Risers cannot be located on same face as 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
- 6/ Fan coil and E/HRV Service access is always through the front panel

Fan Coil & HRV Airflow vs Wattage & Effectiveness

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	Winter Sensible Efficiency (Effective)	Summer Sensible Efficiency (Effective)	Total Unit Fan Wattage (HRV & Fan Coil)
Model 03								
300 (142)	0.00 (00)	20W	20 (9)	0.20 (50)	20W	90%	90%	40W
300 (142)	0.20 (50)	35W	20 (9)	0.20 (50)	20W	90%	90%	55W
300 (142)	0.40 (100)	50W	20 (9)	0.20 (50)	20W	90%	90%	70W
Model 04								
400 (189)	0.00 (00)	35W	25 (12)	0.20 (50)	25W	88%	88%	60W
400 (189)	0.20 (50)	60W	25 (12)	0.20 (50)	25W	88%	88%	85W
400 (189)	0.40 (100)	80W	25 (12)	0.20 (50)	25W	88%	88%	105W
Model 06								
600 (283)	0.00 (00)	60W	40 (19)	0.20 (50)	30W	84%	84%	90W
600 (283)	0.20 (50)	90W	40 (19)	0.20 (50)	30W	84%	84%	120W
600 (283)	0.40 (100)	125W	40 (19)	0.20 (50)	30W	84%	84%	155W
Model 08								
800 (376)	0.00 (00)	120W	50 (24)	0.30 (75)	35W	82%	82%	155W
800 (376)	0.20 (50)	155W	50 (24)	0.30 (75)	35W	82%	82%	190W
800 (376)	0.40 (100)	170W	50 (24)	0.30 (75)	35W	82%	82%	205W
Model 10								
1000 (472)	0.00 (00)	190W	60 (28)	0.40 (100)	45W	81%	81%	135W
1000 (472)	0.20 (50)	240W	60 (28)	0.40 (100)	45W	81%	81%	285W
1000 (472)	0.40 (100)	295W	60 (28)	0.40 (100)	45W	81%	81%	340W
Model 12								
1200 (566)	0.00 (00)	325W	60 (28)	0.50 (124)	50W	81%	81%	375W
1200 (566)	0.20 (50)	395W	60 (28)	0.50 (124)	50W	81%	81%	445W
1200 (566)	0.40 (100)	450W	60 (28)	0.50 (124)	50W	81%	81%	500W

Performance based on ARHI Test Conditions

1 one mance based on Arth 1 oct Conditions					
	Sum	mer	Winter		
	Outdoor	Outdoor Indoor		Indoor	
Dry Bulb	95F (35C)	75F (24C)	19F (-7C)	70F (21C)	
Wet Bulb	78F (26C)	63F (17C)	16F (-9C)	58F (14C)	
Relative Humidity	47%	51%	82%	48%	

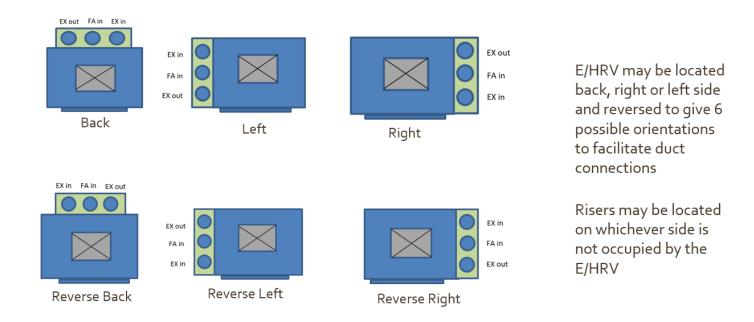
Fan Coil & ERV Airflow vs Wattage & Effectiveness

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	Summer Sensible Efficiency (Effective)	Summer Latent Efficiency (Effective)	Total Efficiency (Effective)	Total Unit Fan Wattage (ERV & Fan Coil)
Model 03									
300 (142)	0.00 (00)	20W	20 (9)	0.20 (50)	20W	86%	77%	81%	40W
300 (142)	0.20 (50)	35W	20 (9)	0.20 (50)	20W	86%	77%	81%	55W
300 (142)	0.40 (100)	50W	20 (9)	0.20 (50)	20W	86%	77%	81%	70W
Model 04									
400 (189)	0.00 (00)	35W	25 (12)	0.25 (62)	25W	83%	73%	77%	60W
400 (189)	0.20 (50)	60W	25 (12)	0.25 (62)	25W	83%	73%	77%	85W
400 (189)	0.40 (100)	80W	25 (12)	0.25 (62)	25W	83%	73%	77%	105W
Model 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
Model 08									
800 (376)	0.00 (50)	120W	50 (24)	0.30 (75)	35W	73%	60%	66%	155W
800 (376)	0.20 (50)	155W	50 (24)	0.30 (75)	35W	73%	60%	66%	190W
800 (376)	0.40 (100)	170W	50 (24)	0.30 (75)	35W	73%	60%	66%	205W
Model 10									
1000 (472)	0.00 (00)	190W	60 (28)	0.40 (100)	45W	71%	57%	63%	135W
1000 (472)	0.20 (50)	240W	60 (28)	0.40 (100)	45W	71%	57%	63%	285W
1000	0.40 (100)	295W	60 (28)	0.40 (100)	45W	71%	57%	63%	340W
(472)									
Model 12 1200	0.00 (50)	325W	60 (36)	0.50 (104)	50W	71%	57%	63%	375W
(566)	0.00 (50)		60 (28)	0.50 (124)					
1200 (566)	0.20 (75)	395W	60 (28)	0.50 (124)	50W	71%	57%	63%	445W
1200 (566)	0.40 (100)	450W	60 (28)	0.50 (124)	50W	71%	57%	63%	500W

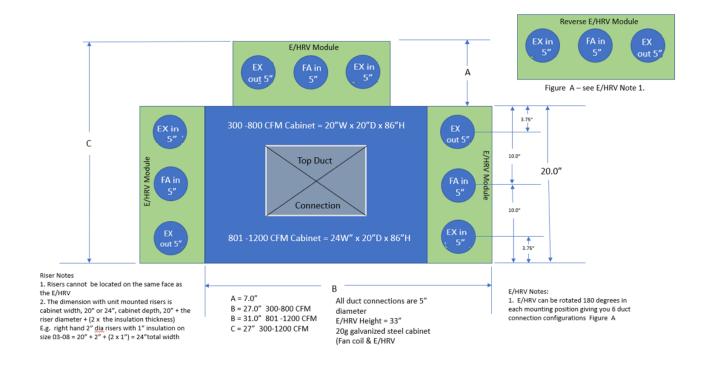
Performance based on AHRI test Conditions

	Sum	nmer	Winter		
	Outdoor Indoor		Outdoor	Indoor	
Dry Bulb	95F (35C)	75F (24C)	35F (-7C)	70F (21C)	
Wet Bulb	77F (25C)	63F (18C)	29F (-9C)	58F (14C)	
Relative Humidity	48%	51%	82%	48%	

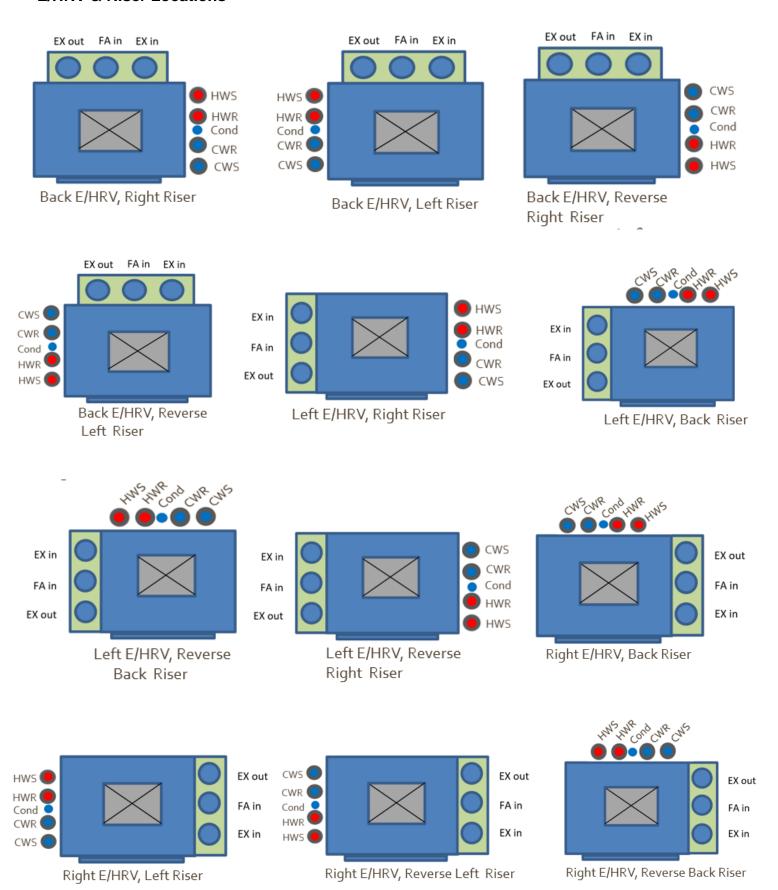
6 E/HRV Orientations for suite design flexibility



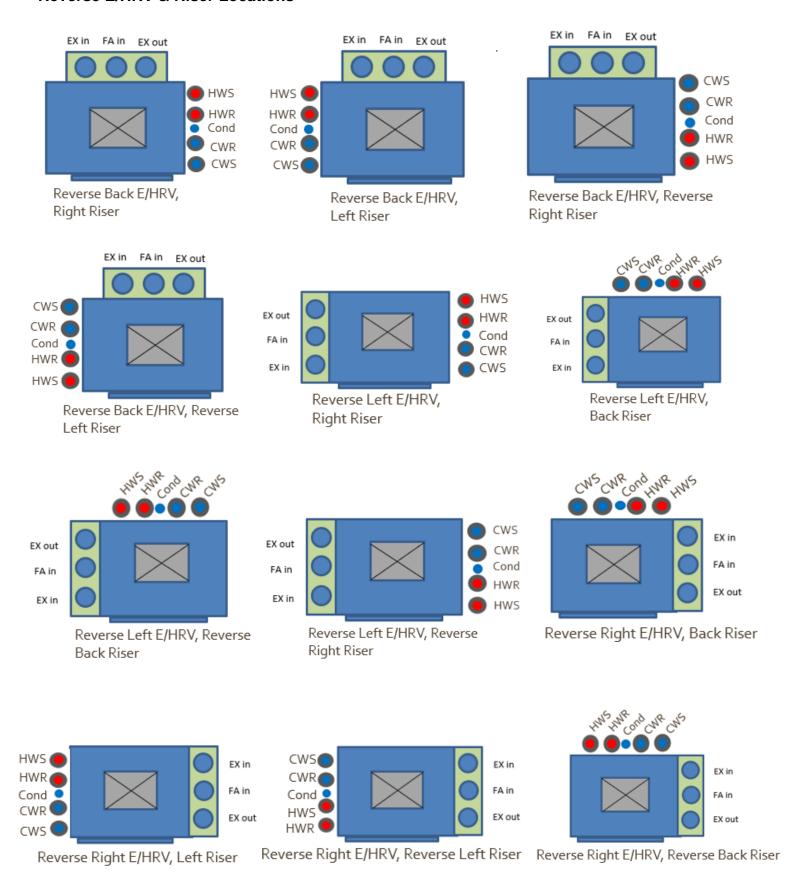
E/HRV Mounting Locations & Duct Connections



E/HRV & Riser Locations



Reverse E/HRV & Riser Locations



Fan Coil w E/H	IRV Electrical Dat	а		
Model	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	al Data
Dimensions	33"H x 20"W x 7"D
Weight	45 lbs.
Construction	20 gauge galvanized sheet metal
Insulation	½" 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	90 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	81	81	
70	79	79	
80	78	78	
90	77	77	
100	76	76	

ERV Perfor	ERV Performance (sensible & latent energy recovery effectiveness)					
Airflow (CFM)	Summer Sensible	Summer Latent	Winter Sensible	Winter Latent	Total Effectiveness	
20	85	77	85	77	81	
25	82	73	82	73	77	
30	80	69	80	69	73	
40	76	64	76	64	69	
50	73	60	73	60	66	
60	71	56	71	56	63	
70	69	54	69	54	59	
80	67	51	67	51	57	
90	65	49	65	49	55	
100	64	47	64	47	53	

Performance based on AHRI test Conditions

Sound Data - Integrated E/HRV Fan Coil

					1	/3 Octave I	Band Frequ	encies (Hz	:)		
			63	125	250	500	1000	2000	4000	8000	A-wt.
Model	CFM					Sour	nd Power	, dB			
03-04	175	-	48	51	49	47	44	41	30	31	49
	300	-	50	53	50	49	44	43	32	29	51
	400	-	51	56	53	50	44	43	33	31	52
06-08	400	-	51	56	53	50	44	43	33	31	52
	600	-	55	56	52	51	44	43	33	31	52
	800	-	59	61	55	51	46	44	31	30	53
10-12	600	-	52	57	54	50	42	36	29	32	51
	800	-	51	56	52	54	44	43	33	31	53
	1000	-	52	57	50	55	45	43	37	29	54
	1200	-	56	61	62	57	50	48	42	31	59

Fan coil operating at 0.2" wc ESP and E/HRV operating at 60 CFM at 0.2" wc ESP - Consult factory for sound power values not listed.

Recommendations for a quiet fan coil HVAC system

- 1/ Orientate the fan coil unit so the return air panel faces a less noise sensitive area like a hallway, entry way, or Kitchen
- 2/ Avoid having a supply air grille on the same face as the return air when possible, especially if you have a single supply air opening. Having the supply grill on a different size splits the sounds paths to the source
- 3/ Always use a variable speed ECM fan (standard in all Temspec units) The fan will operate at it's lowest speed, (lowest sound power level) to maintain the thermostat setpoint
- 4/ Right size your fan coil. Over sizing a fan coil leads to short cycling, higher than needed noise levels, poorer d5/ Use 1" fiberglass insulation in the cabinet (standard in all Temspec units) 1" thick insulation is more effective in mitigating noise in the 125 and 250 HZ octave bands than ½" thick insulation. These two octave bands typically set the space NC level so reducing sound power in them has a significant affect



A hinged perimeter return air panel offers excellent access to the E/HRV. The design is aesthetically pleasing and offers excellent acoustic abatement by eliminating the line of sight to the primary noise source (supply fan)



Selecting an E/HRV Fan coil

Many municipalities have adopted minimum SRE values (sensible heat recovery efficiency), with no regard for amount of energy needed to achieve this recovery. For example, the heat exchanger or core, could have a very high pressure drop and/or the E/HRV intake and exhaust fans could horribly in-efficient.

Temspec maintains that the only value that truly counts is the net energy of the E/HRV fan coil. To calculate this, we take the recovered energy (watts) at AHRI conditions and subtract both the fan coil supply energy (watts) and the E/HRV intake and exhaust fan energy (watts)

Energy modelers understand this but building code officials simply check a box indicating the unit has an 80% SRE minimum performance regardless of the fact that more energy could be consumed than recovered.

E/HRV Net Energy Formula



E/HRV Recovery (ER)	E/HRV Fan Energy (FA)	E/HRV Fan energy (EA)	Fan Coll Fan Energy	net Energy

Net Energy Comparison (AHRI Test Conditions 600CFM Fan Coil and 40CFM ERV)					
ER Watts FA Watts EA Watts FC Watts Net Energy Watts					
Temspec	489 Recovered	-15	-15	-52	407
Other	331 Recovered	-38	-38	-98	157

Supply Air Opening Connection Dimensions

	Su	ipply Air Openings (Non ducted U	nits)
	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

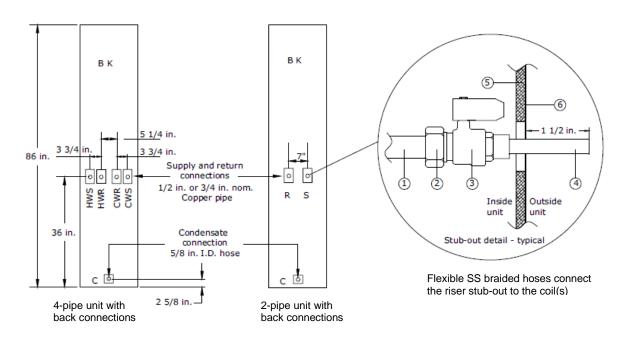
Note: E/HRV units can have only 2 supply air openings in addition to the top

	Supply Air Openings (Ducted Units)						
	100%	One on unit & Top Duct		**Two on unit 8	**Two on unit & Top Duct		t & 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".

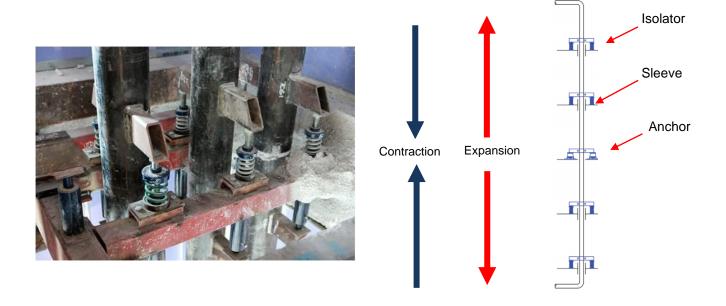
Figure 1.0 illustrates a horizontal expansion system while figure 2.0 illustrate an in-line system. Figure 3.0 illustrates a full floating system which had gained popularity because there are no additional potential failure components introduced to the piping system



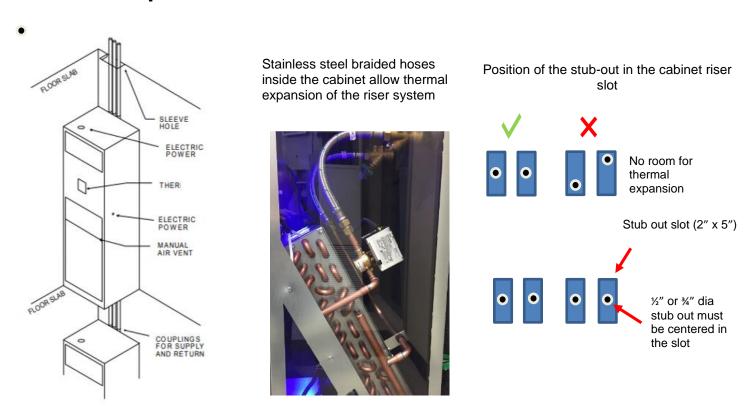


Fig. 1.0 Horizontal Thermal Expansion Loops

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

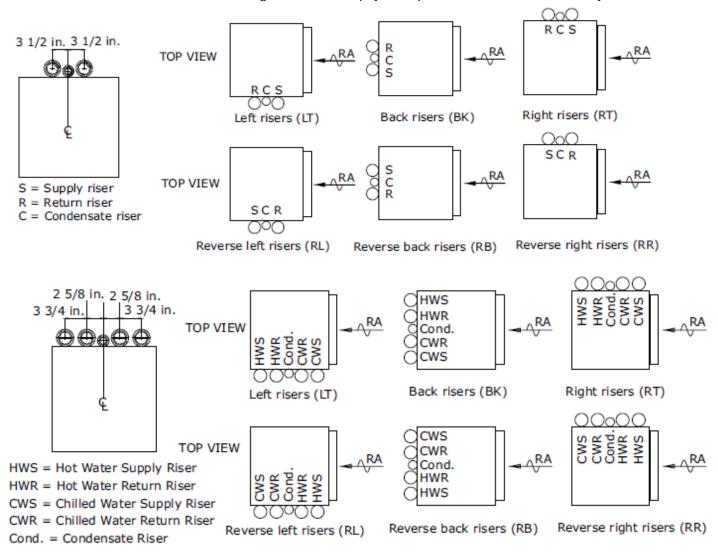
Factory- and field-installed risers

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 comi (primary/secondary) ve).



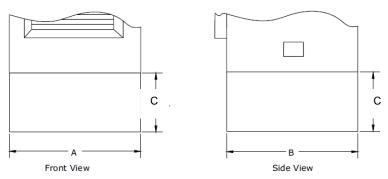
Risers are always sized based on the floor to floor height to ensure the proper assembly. To ensure proper alignment, the top of the riser is should always be positioned at a distance of 92" from the floor. This distance allows all risers to be properly sized based on the distance of L = F + 2", where 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 Using Standard Installation Spool Pieces 2010/01/2011 10:00:00:00 E 30 7 & 12 4 | E 20 7 10 134 92 in. 92 in. - L + 4 in. 92 in. 92 in. A 2 3 4 5 4 5 L = F + 2 inches 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)

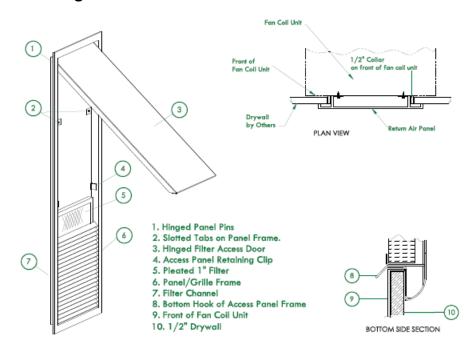
Model	Α	В	С
03	16	16	4, 8 or 12
04	16	16	4, 8 or 12
06	20	18	4, 8 or 12
08	20	18	4, 8 or 12
10	24	18	4, 8 or 12
12	24	18	4, 8 or 12

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

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. (83 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 replacement 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 a Temspec sales representative to learn more about this quick retrofit solution.







Remove R/A Panel,
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 a conditioned space protected from dust, moisture and sunlight, while waiting for installation
- 2) Keep unit protected from dust, moisture and sunlight 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) We recommend using a vacuum to clean the coils and drain pans but if a cleaning solution is used, thoroughly flush the coil and drain pans after cleaning to avoid corrosion
- 8) Do not exceed the design chilled and hot water operating temperatures and pressures

HVAC Formulas

Air Side Equations

Q sensible = $1.085 \times CFM \times \Delta T$ (°F) (Bth/h) Q latent = $0.68 \times CFM \times \Delta gr$ (gr/lb) (Bth/h) Q total = $4.5 \times CFM \times \Delta h$ (Bth/lb) (Bth/h)

Fan Power Equation

BHP = $\underline{\text{SCFM X S.P. (in wc)}}$ (HP) 6356 x fan eff.

Water Side Equations

Q = 500 x US gpm x \triangle T (°F) (Bth/h)

Pump Power Equation

BHP_{pump} = $\underline{\text{USgpm x Head (ft)}}$ (HP) 3960 x Pump eff.

HVAC Conversion Factors

Air Volume 1 CFM = .4719 l/s 1 l/s = 2.1189 CFM

Static Pressure 1 in wc = 249.088 Pa 1Pa = .00401 in wc

Liquid Flow 1 GPM = .06309 l/s 1 l/s = .21997 GPM

Weight 1 lb = .45359 kg 1 kg = 2.2046 lbs

Length 1 mm = .03937 in 1 in = 25.4 mm

Energy 1 kW = 3412 BTU 1 BTU = .000293 kW

Power I kW = 1.341 HP 1HP = .74569 kW

	LEAF Fan Coil Specificatio		
	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 x 457mmD
MAX Airflow	100-400CFM, (47 - 189I/s)	200-800CFM, (94 - 378I/s)	300-1200CFM, (142 - 566l/s)
MAX ESP @ design airflow	0.2" wc, (50pa)	0.4" wc, (100pa)	0.4' wc, (100pa)
*Weight	170lbs, (77kg)	170lbs, (77kg)	210lbs, (95kg)
Cooling	Hydronic		
Heating	Hydronic, Electric		
Construction	20 Gauge galvanized metal		
Insulation	1" (25mm) Glass fibre with Acrylic facing, 1/2" (12mm) Closed Cell		
Condensate Drain	Polymer or 304 Stainless Steel	Acrylic coated galvanized or 304 Stainless Steel	Acrylic coated galvanized 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 12
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, 200-277VA
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 position, 0-10VDC modulating, floating point control,		
Fresh air Opening	4"H x 6"W, manual or motorized damper		
Raised Bases	4.0", 8.0", or 12.0" High, with optional access door		
Condensate pump	Optional with 8.0" or 12.0" H raised base		
Fan Motor	Variable Speed ECM		
Operating Temp Range	-25C to +60C -13F to 140F		
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	1/2" to 1.5" Fibreglass, Polyolefin, Elastomeric K-Flex, Armaflex (thickness restrictions based or riser diameters)		
Coo page 25 for E/HBV For Coil		riser diameters;	

^{*}See page 25 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 ½ 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. 2-position and modulating 6-way valves are available for low grade heating water applications. 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 (Thermostat)

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.

Optional R/A panels - full-face panel designed to cover the entire opening for retrofit applications available in sizes from 86" – 94" high x 18" - 22" wide. Perimeter panel with hinged door.

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.





