

# Cabinet Unit Heaters

Hydronic Heating

Catalog

always the best climate





# Versatility, style and heating efficiency

## Engineering excellence and contemporary design

With over 75 years experience in the design and manufacture of hydronic heating and cooling systems, Zehnder Rittling understands your need for efficient equipment that will complement the décor. Rittling Cabinet Unit Heaters offer the latest in attractive design and are engineered to provide years of reliable operation and energy-efficient comfort. All units run quietly and feature individual controls.

## Meet specific heating requirements

Rittling Cabinet Unit Heaters are available in a wide range of models and air flow arrangements to satisfy the demands of your heating specifications.

## Flexible safe installation

Rittling Cabinet Unit Heaters are available in floor, wall and ceiling-mounted models. All Rittling models come with a hinged front cover and retaining chain(s) for simple and secure maintenance. The wall and ceiling mounted units are interchangeable, allowing for field adjustments as needed.

## Uniform appearance

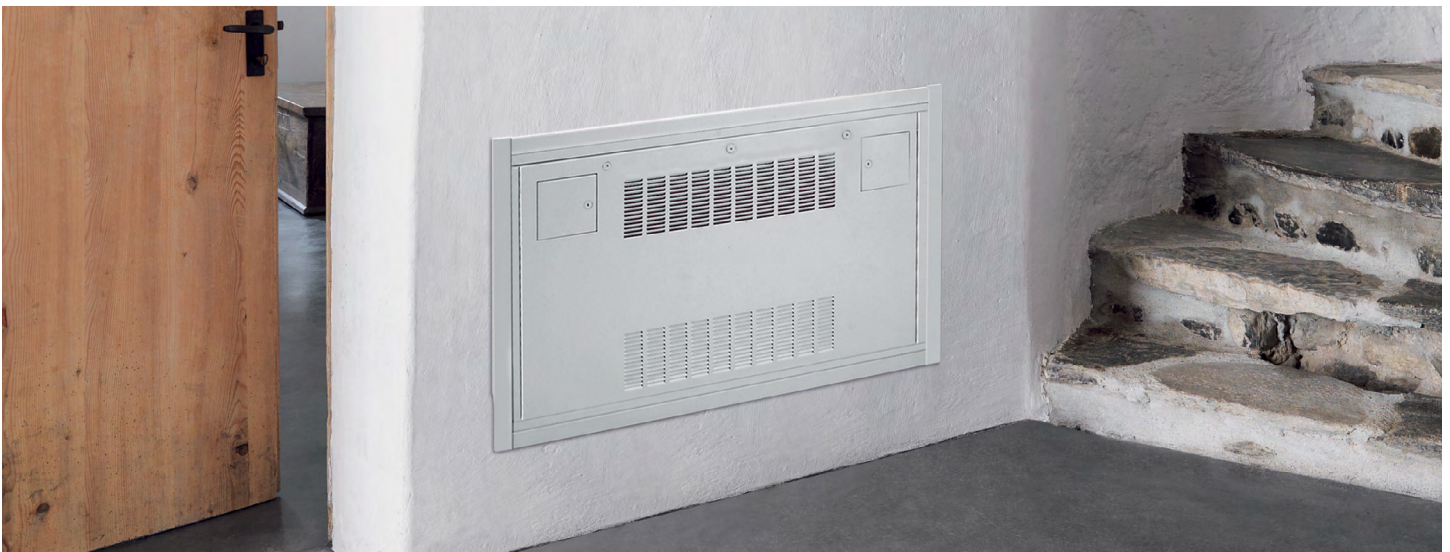
All Rittling Cabinet Unit Heaters wall and ceiling units have the same height and the same depth per model—only the length varies for different unit capacities. Floor mounted units have an additional leg base, adding height but use the same depth and lengths. This provides a consistent, attractive appearance when an installation calls for units of various capacities and types.

## Easy to operate

Rittling Cabinet Unit Heaters feature three-speed control and optional thermostats. The user has fingertip control over fan speed and room temperature or units can have hidden controls to prevent tampering, or allow for field installation.

## Durable

Front cabinets are constructed of 16-gauge cold rolled steel to withstand impact and rugged treatment. For even more rugged applications 14-gauge is available. Exterior cabinet surfaces feature an epoxy powder coating to provide a durable, attractive finish.

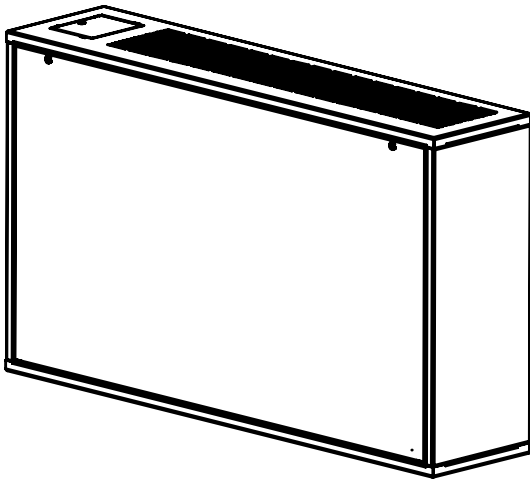




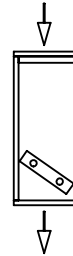
Models and arrangements	2
Features	5
Options and accessories	6
AHRI ratings	8
Electrical data	9
Valve packages	10
Control packages	13
Dimensions and data	15
Mechanical Specifications	30
Warranty	32

# Models and airflow arrangements

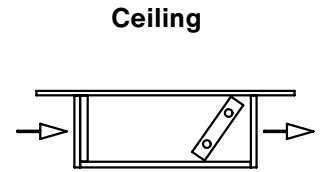
## Wall models/Ceiling models



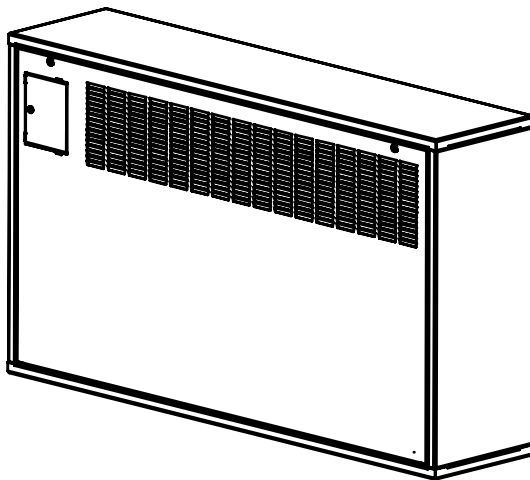
RCWI-290: Wall/Ceiling



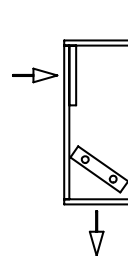
Wall



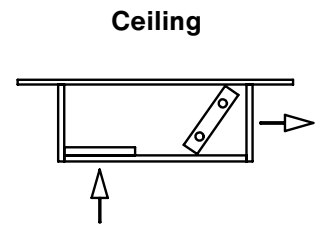
Ceiling



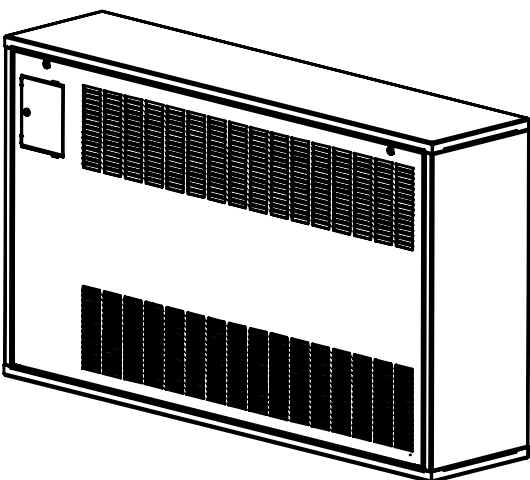
RCWI-300: Wall/Ceiling



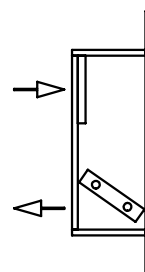
Wall



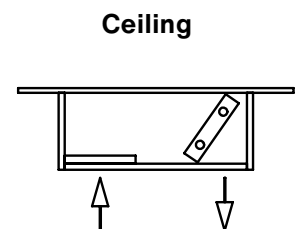
Ceiling



RCWI-350: Wall/Ceiling



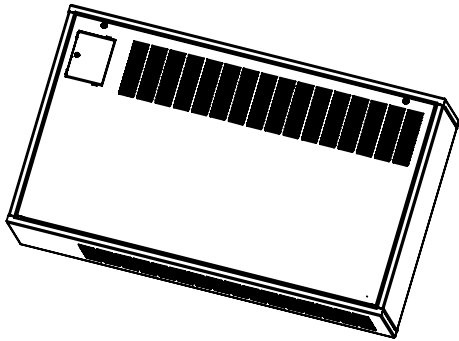
Wall



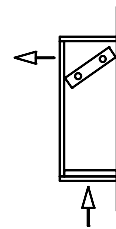
Ceiling

# Models and airflow arrangements

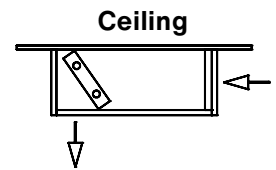
## Wall models/Ceiling models



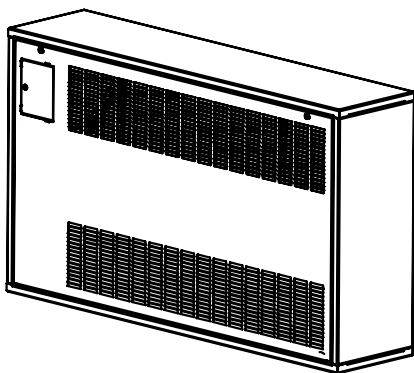
**RCW-380: Wall/Ceiling**



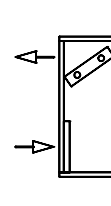
**Wall**



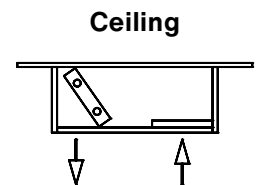
**Ceiling**



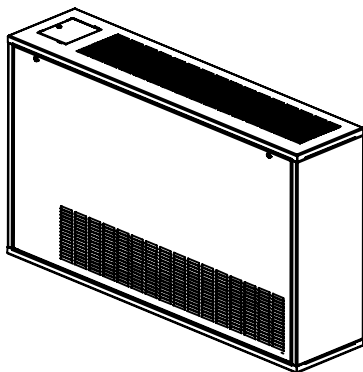
**RCW-420: Wall/Ceiling**



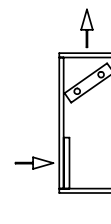
**Wall**



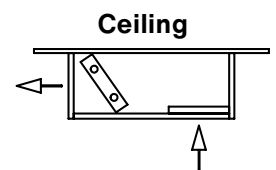
**Ceiling**



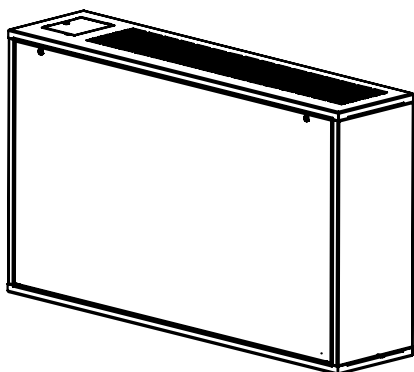
**RCW-400: Wall/Ceiling**



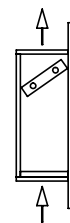
**Wall**



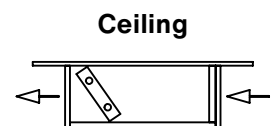
**Ceiling**



**RCW-430: Wall/Ceiling**



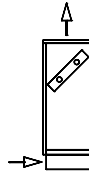
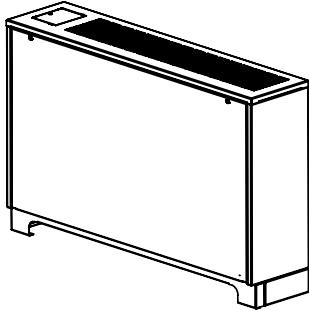
**Wall**



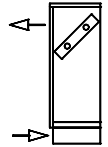
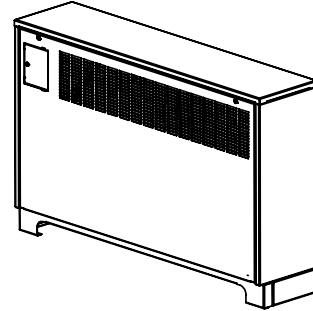
**Ceiling**

# Models and airflow arrangements

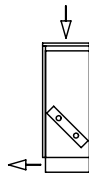
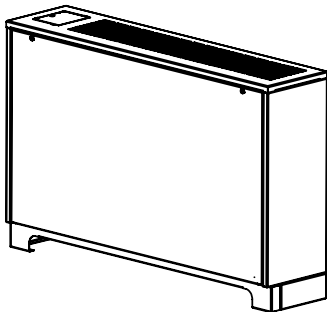
## Floor models



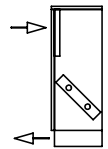
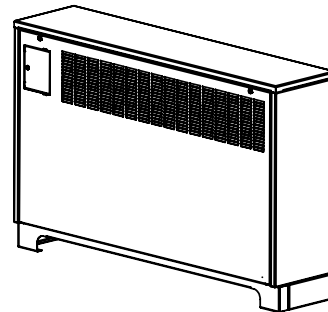
**RFF-200: Floor**



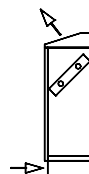
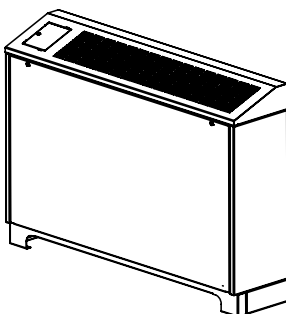
**RFF-220: Floor**



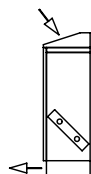
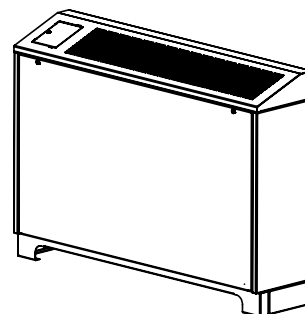
**RFFI-240: Floor**



**RFFI-250: Floor**

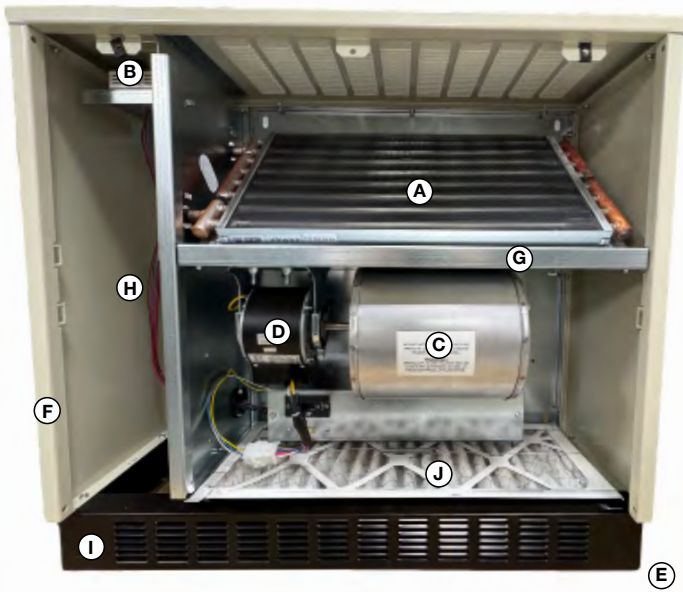


**RFS-200: Floor**



**RFSI-240: Floor**

# Standard Features



## A: Coils

### 1 row standard

- Sturdy, mechanically-bonded copper/aluminum coil with 12 fins per inch and 1/2" nominal tubes
- High BTU/hr capacity with low noise
- Coil assemblies tested for a maximum of 300 psig working pressure
- Manual air vent

## B: Speed control/access door

- Hidden from view, three-speed fan switch allows speed selection for comfort control
- Easy opening access doors feature cam lock fasteners

## C: Blower fan housing

- Provides excellent CFM output per unit size
- Operating ampere ranges from 0.3 amps (125 CFM) to 2.26 amps (1180 CFM), 120 volts
- Quiet blower assembly made with galvanized steel for strength and durability

## D: Motor

- Motors are permanent split capacitor for extended, reliable motor life
- Multispeed motors achieve a wide range of CFM delivered

## E: Cabinet (Not pictured)

- Heavy duty 16-gauge front panel protects against impact. Tamper-resistant, flush-mounted fasteners included as standard. All models come equipped with a hinged front panel and retaining chain[s] for secure and easy maintenance.

## F: Finish

- Attractive epoxy powder coating is standard, per our standard color chart

## G: Blower deck

- Blower deck enhances strength and stability, with easy accessibility
- Removable for ease of maintenance

## H: Access area

- Large rough-in area at chosen end of the unit provides ample room for plumbing and switch location
- Removable front panel provides access to valve/piping connection and electrical wiring area below the fan deck. This control box is fully removable for installation or maintenance.

## I: Leg base

- Floor units come equipped with a leg base to sit the unit off the floor with an arched inlet opening

## J: Filter

- 1" disposable spun glass media slides easily into locating tabs
- Easily removed, held in place spring clips to allow for easy change out



# Options and accessory equipment

## Factory assembled

### Access door

- Optional Allen key fasteners are available. Contact the factory regarding Torx head fasteners.

### Cabinet

#### Construction

- 14-gauge front panel only and complete 14-gauge cabinet construction available for heavy-duty applications.

#### End pocket extension

- 6" left hand or right hand end pocket extensions allow additional room for the mounting of valve packages and piping. Access doors are located in standard position.

#### Insulated front panel

- Entire front panel is insulated with 1/4" thick closed cell insulation for superior thermal protection and noise reduction.

#### Insulated internal cabinet

The front panel, blower deck, and chassis coil section are insulated with 1/4" thick closed cell insulation for superior thermal protection and noise reduction.

### Coils

#### High capacity 2 and 4 row coil

- Provides high heat output in limited space requirements. These coils are available in hot water applications only.

#### Automatic air vent

- In lieu of manual air vent (hot water only).

### Color

- Custom colors available for match with a paint chip sample

### Controls

#### Fan control by air temperature

- Remote or unit mounted thermostat monitors air temperature in the space. When the temperature drops below set point during heating, the heating valve will open and the fan will turn on. When the space temperature is satisfied, the valve will close and the fan will turn off. A remote temperature sensor is offered with all thermostat options for remote mounting in space or in return air stream.

#### Fan control by water temperature

- Aquastat monitors the temperature of water leaving the coil. It will delay the motor blower until a pre-determined water temperature is reached.

#### Valve control by air temperature

- Remote or unit mounted thermostat monitors air temperature in the space. When the temperature drops below set point, the heating valve will open. When the space temperature is satisfied, the valve will close. The blower runs continuously based on three-speed switch positions. A remote temperature sensor is offered with all thermostat options for remote mounting in space or in return air stream.

#### Remote temperature sensor

- Recommended with all unit mounted thermostats. Operates with all standard Zehnder Rittling control packages with the removal of JP1 jumper, internal to thermostat.

#### 24V transformer (24VT)

- 40VA, 120V/24V transformer is unit mounted with 120V pre-wired,

ready for 24V field wiring. (24T3) includes three-speed switch.

#### 24V relay (24VR)

- Relay is unit mounted, ready for field wiring.

#### 24V fan center (24FC)

- Includes a 40VA, 120V/24V transformer and one (1) 24V relay. Fan center is unit mounted with 120V pre-wired, ready for 24V field wiring.

#### 24V relay pack (24RP)

- Includes a 40VA, 120V/24V transformer and three 24V relays. Relay pack is unit mounted with 120V pre-wired, ready for 24V field wiring.

### Dampers

#### 0-25% manual outside air damper

- Includes damper, manually adjustable through return air opening. Located in bottom of floor mounted units only (models RFF and RFS units only).

#### 0-25% motorized outside air damper

- Operational at 0% or 25% outside air. Furnished with a 120V/60/1 synchronous motor that is wired to the blower to automatically open the damper when the fan starts. When the power is off or interrupted, the damper returns to the closed position. Located in bottom of floor mounted units only (models RFF and RFS).

### Filters

#### MERV 8

- 1" high efficiency, pleated throwaway filter.

# Options and accessory equipment

## Leveling legs

- On RFF and RFS models leveling legs are available to adjust pitch on uneven floors.

## Motors

### EC motor

- Electronically commutated motors (ECM).
- High-efficiency, programmable, brushless DC motors that utilize a permanent magnet rotor and built-in inverter.
- Provide low operating cost and ultra-quiet operation.
- Three speed or 2-10V control programs available. Three speed programs can utilize standard control options. 2-10v control for BAS/BSS systems.
- Line voltage power used for motor operations, Unit includes 24v transformer for the required 24v controls.

### High static motor

- Standard airflow maintained with external static pressure of up to 0.2" water column.

### Alternate voltage

- 208V, 230V, 277V EC motor

### Motor quick connect

- Molex connectors are provided on each motor for ease of removal, located at motor.

### Disconnect switch

- Installed on face of electrical junction box (15 amp max.).

### Motor starter

- 120V/60/1, Manual reset motor starter with toggle switch and thermal overload protection. Unit can only be restarted by resetting toggle switch. Starter comes with an overload protection set at 125% of full load current. Contact factory for alternate voltages. PSC motor only.

## Supply and return options

### Louvered inlet

- On Models RFF and RFS: the optional kick space louvered inlet provides appealing, continuous closed floor line and hinders build up of dust, papers, or other material.

### Security-perforated grille

- Security-perforated grille is available for installations such as prisons, schools, housing projects or high-traffic areas. Perforated holes provide enough open area for efficient output while keeping the unit tamper-resistant. Contact the factory for details and availability.

## Field assembled

### Wall seal

- Used to recess RC/W models, with compatible airflow arrangements

### Valve packages

- Shipped loose for field installation. See pages 18-22 for more information.

# Table A: Standard ratings and specifications

Specifications		02	03	04	06	08	10	12
Steam capacity	MBH	18.7	25.5	34.8	51.0	62.8	73.4	90.7
	EDR	76	104	144	212	260	304	376
Hot water capacity (1 row coil)	MBH	16.2	22.4	30.7	45.5	54.8	64.5	80.1
	GPM	1.7	2.3	3.2	4.8	5.7	6.7	8.4
	WPD	0.2	0.4	0.8	2.2	0.5	0.7	1.2
Hot water capacity (2 row coil)	MBH	25.0	34.3	47.2	69.5	86.6	101.2	125.3
	GPM	2.6	3.6	4.9	7.3	9.0	10.5	13.1
	WPD	0.8	1.7	3.6	9.3	2.2	3.3	5.6
Heating capacity (4 row main coil)	MBH	19.9	25.5	46.3	65.8	87.0	100.7	119.9
	GPM	1.9	2.5	4.3	5.8	7.5	10.3	12.3
	WPD	6.2	11.8	35.8	15.2	26.1	19.6	28.4
CFM: standard PSC	High	220	300	420	620	810	940	1180
	Medium	150	200	310	450	600	720	875
	Low	125	140	220	350	440	480	660
CFM: high static PSC (@ 0.2" ESP)	High	250	345	490	640	920	1020	1150
	Medium	210	290	425	550	780	870	960
	Low	160	230	320	420	590	660	750
1/2 Row coil	FPI	12	12	12	12	12	12	12
	Face area, ft2	1.25	1.67	2.08	2.92	333	3.89	4.58
	Coil connections	1/2" Cu	1/2" Cu	1/2" Cu	1/2" Cu	1/2" Cu	1/2" Cu	1/2" Cu
Blower	Quantity	1	1	2	2	1, 2	4	4
	Diameter	5.7"	5.7"	5.7"	5.7"	5.7"	5.7"	5.7"
	Width	7.5"	10.4"	7.5"	10.4"	7.5", 10.4"	7.5"	10.4"
Filter	Number	1	1	1	1	1	1	1
	Length, in.	21.5	27.5	33.5	45.5	51.5	59.5	69.5
	Width, in.-standard	7.25	7.25	7.25	7.25	7.25	7.25	7.25
	Rating	Merv. 4	Merv. 4	Merv. 4	Merv. 4	Merv. 4	Merv. 4	Merv. 4
	Thickness, in.	1	1	1	1	1	1	1
Cabinet Size	Length, in.	29	35	41	53	59	67	77
	Width, in.	9.5	9.5	9.5	9.5	9.5	9.5	9.5
	Height, in. - wall/ceiling	24	24	24	24	24	24	24
	Height, in. - flat top floor	26.25	26.25	26.25	26.25	26.25	26.25	26.25
	Height, in. - slop top floor	29	29	29	29	29	29	29
Shipping weight, lbs.		85	100	115	140	155	170	195

**Notes**

- Airflows for floor mounted units with 1-row coil. Please check with factory for adjusted outputs on other models
- Heating capacity based on inlet air 60 °F DB, 200°F entering water or 2 psig steam, 180°F leaving water, standard motor at high fan speed

- Pressure drop (PD) shown in feet of water
- Overall length for fully and partially recessed units is length +3", adding in the trim kit. Wall rough-in hole dimension to be length +1/2" by 24-1/2" minimum. Maximum opening to be length by +2" by 26".



# Table B: Electrical data

		Motor Type	02	03	04	06	08	10	12
HP	PSC	Standard	1/30	1/30	1/25	1/15	1/30, 1/15	(2) 1/15	(2) 1/15
		High-Static	1/12	1/12	1/10	1/7	1/12, 1/7	(2) 1/7	(2) 1/7
	ECM	Standard	1/4	1/4	1/4	1/4	(2) 1/4	(2) 1/4	(2) 1/4
		High-Static	1/4	1/4	1/4	1/4	(2) 1/4	(2) 1/4	(2) 1/4
Motor FLA 120V	PSC	Standard	0.60	0.60	0.68	1.13	1.73	2.26	2.26
		High-Static	1.05	1.05	1.2	1.7	2.8	3.4	3.4
	ECM	Standard	0.92	0.84	1.12	1.70	2.85	3.04	3.58
		High-Static	1.05	1.05	1.2	1.7	2.8	3.4	3.4
Power Input: Watts 120V	PSC	Standard	57	61	75	130	200	240	250
		High-Static	117	120	130	180	325	368	368
	ECM	Standard	38	38	45	80	125	147	157
		High-Static	38	38	45	80	125	147	157
Motor FLA 120V/60Hz/1Ph	ECM	Standard	0.78	0.88	1.05	1.60	2.52	2.65	3.20
		High static	1.33	1.33	1.80	2.21	3.16	3.47	3.60
	ECM	Standard	36	43	46	79	123	152	158
		High static	88	90	129	151	240	293	302

**Notes:**

- Maximum circuit ampacity (MCA) =  
1.25 x (FLA motor 1 + FLA motor 2 + FLA electric heat)
- Maximum overcurrent protection (MOP) =  
(2.25 x FLA motor 1) + FLA motor 2 + FLA electric heat
- If the calculated MOP is within 10% of the next smaller available fuse size, that fuse size shall be used. If not, the next larger fuse size above the calculated MOP must be used.
- If the selected MOP is smaller than the MCA, the selected MOP must be increased to the next larger available fuse size above the MCA.

- If the MOP is less than 15, it shall be rounded up to 15 amps. This is the minimum fuse or circuit breaker permitted by code.
- EC motor nameplate amperage indicates the motor hardware peak amperage while the motor full load amperage (FLA) is limited by the motor's factory programmed operating range, programmed specifically for each unit size. The programmed operating range is generally only a portion of the motor hardware full potential resulting in the motor FLA being lower than the nameplate FLA. Motor FLA will be reflected on the Cabinet Unit Heater serial tag and should be used when sizing building electrical requirements.



# Valve packages general data

## Field mounted valve packages

Zehnder Rittling Cabinet Unit Heaters have standard hot water valve packages available as a factory-built assembly, pre-wired option for the heating coil. All valve packages are manufactured within strict tolerances and are hydrostatically tested for leaks. Valve packages are shipped loose for field assembly to ensure a leak free system as factory mounted valve packages often become damaged during shipment.

### Valve package components

- Zehnder Rittling valve packages consist of a variety of components and selection of each combination is dependent upon the application. The following sections provide a detailed description of each of the components. Following this section are additional schematic illustrations and mechanical specifications and photos.

### Piping system/placement

- Valve packages are available with left and/or right hand connections.

### Interconnecting piping

- Interconnecting piping refers to the copper piping which is attached to the coil connections and to which all other components (i.e. control valves, end valves, circuit setters, etc.) are attached. Piping is 1/2" nominal (5/8" OD) copper.

### End valves

Each valve package includes a ball valve for supply water pipe and one of the following end valves on the return water pipe; ball valve, manual circuit setter, or automatic circuit setter. Consult factory for inclusion of other types of valves as end valves.

### Ball valves

- Ball valves, a.k.a. end valves, allow

the unit to be cut off for servicing purposes. They have a low resistance to water flow, operate easily, and are often used for water balancing. These valves have a compact handle that rotates 90 degrees to a fully open position.

- The valve body is forged brass and the ball is polished brass with virgin Teflon seats and seals. Ball valves are available as end valves on both the supply and return water pipes.

### Manual circuit setter

- A manual circuit setter, a.k.a. manual flow control valve, acts as both a flow setting device and a stop valve, taking the place of a ball valve. This valve allows water flow through the fan coil unit and can be set quickly and accurately. Manual circuit setter includes two measuring ports in the valve body for pressure drop measurements during system balancing. This pressure drop can be compared to factory supplied curves showing the corresponding flow rate. This valve has a handwheel with memory feature including a locking



feature for tamperproof setting.

## Control valves

Valve packages are available with or without control valves.

### 2-way on/off valves

- These 1/2" valves are normally closed to the coil as standard and will isolate the coil during a loss of power. Normally open valves are also available upon request. Upon response to a signal from the controller, the valve will be either fully open or fully closed. These valves are located in the water supply pipe and have a  $c_v$  of 3.5, and close off  $\Delta P$  of 25 psi. A means of relieving head pressure must be accounted for when two-way valves are selected, most notably when used in combination with automatic changeover.

### 3-way on/off valves

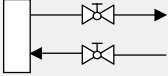
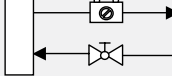
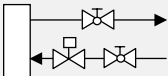
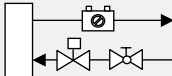
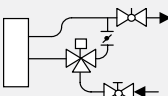
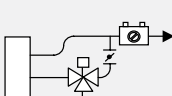
- These 1/2" valves are normally closed to the coil as standard and will isolate the coil during a loss of power. Normally open configurations are simply achieved by turning the valve around. Upon response to a signal from the controller, the valve will be either fully open, allowing full flow to the coil, or fully closed, diverting full flow to the bypass line. All three-way valve configurations include a balance fitting in the bypass line to allow proper flow balancing. These valves are located in the water supply pipe and have a  $c_v$  of 4.0, and close off  $\Delta P$  of 25 psi.

### Balance valves

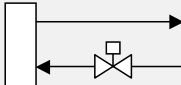
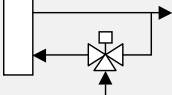
- The valve body is constructed of bronze and is used to balance hydronic circuits.

Please contact Zehnder Rittling regarding any special valve requirements including high close-off pressure control valves, hose kits, additional P/T ports, customer supplied valves, etc.





# Basic valve packages

Pre-assembled packages, shipped loose for field mounting			
Control valve	Basic		Circuit setter
None	<b>V-B1</b> <ul style="list-style-type: none"> <li>Ball valve on supply</li> <li>Ball valve on return</li> </ul> 	<b>V-B2</b> <ul style="list-style-type: none"> <li>Ball valve on supply</li> <li>Manual circuit setter on return</li> </ul> 	
	<b>V-B4E</b> <ul style="list-style-type: none"> <li>2-way electric valve and ball valve on supply</li> <li>Ball valve on return</li> </ul> 		<b>V-B5E</b> <ul style="list-style-type: none"> <li>2-way electric valve and ball valve on supply</li> <li>Manual circuit setter on return</li> </ul> 
3-way on/off	<b>V-B7E</b> <ul style="list-style-type: none"> <li>3-way electric valve and ball valve on supply</li> <li>Balance fitting in bypass</li> <li>Ball valve on return</li> </ul> 	<b>V-B8E</b> <ul style="list-style-type: none"> <li>3-way electric valve and ball valve on supply</li> <li>Balance fitting in bypass</li> <li>Manual circuit setter on return</li> </ul> 	

## Miscellaneous Ship Loose Parts

<b>V-2E</b> <ul style="list-style-type: none"> <li>2-way electric on/off valve on supply</li> </ul> 	<b>V-3E</b> <ul style="list-style-type: none"> <li>3-way electric on/off valve on supply</li> </ul> 
---	---

# Valve packages components mechanical specifications

Component		Part	Material	Temperature	Working pressure
Balance valve		Body	Bronze	220 °F maximum	300 psi
		O-ring	EPDM		
Manual circuit setter		Body	Bronze	250 °F maximum	200 psi
		Ball	Brass		
		Seat rings	Glass and carbon filled TFE		
		O-ring	EPDM		
Ball valve		Body	Forged brass	325 °F maximum	600 psi
		Ball	Brass/chrome plated		
		Seat	PTFE		
		Stem	Brass		
		Seals	Viton		
Control valve		Body	Forged brass	200 °F maximum	300 psi
		Stem	Nickel plated/chrome plated brass		
		Seat	Brass		
		Paddle/plug	On/off: Buna		
		Actuator	On/off: stainless steel base plate, aluminum cove		

# 120 volt control packages

## Electronic on-off valve/thermostat

Zehnder Rittling provides a control system that includes a thermostat, control board with relays, and manually operated three-speed fan switch. For fan cycle operation, the thermostat cycles the fan from the selected speed to off. No control valve is provided in this operation. For fan/valve cycle operation, the thermostat cycles the fan and control valve. The fan runs intermittently unless the speed control switch is in the off position. Valve is not included in the control package price.

Two pipe control: Fan cycled or fan/valve cycled	
Package number	Thermostat description
2F0T	On/off system switch and three-speed fan control
3SPD	120V three speed switch

**Notes:**

- A means of relieving pump head pressure must be accounted for when two-way valves are used with an automatic thermostat package
- The fan cycles with demand for heating, but if the system switch is off, the fan is off
- Remote temperature sensors are recommended with all unit mounted thermostats for improved temperature control

Zehnder Rittling provides a control system that includes a thermostat, control board, and manually operated three-speed fan switch and changeover switch (when required). The thermostat cycles the electric control valve. The fan runs continuously. Valve is not included in the control package price.

Two pipe control: Valve cycled	
Package number	Thermostat description
2V0T	On/off system switch and three-speed fan control

**Notes:**

- A means of relieving pump head pressure must be accounted for when two-way valves are used with an automatic thermostat package
- The fan runs continuously, but if the system switch is off, the fan is off
- Remote temperature sensors are recommended with all unit mounted thermostats for improved temperature control



# 24 volt control packages

## Electronic on-off valve/thermostat

Zehnder Rittling provides a control system that includes a thermostat, control board with 40VA 120V/24V control transformer and relays, and manually operated three-speed fan switch. For fan cycle operation, the thermostat cycles the fan from the selected speed to off. No control valve is provided in this operation. For fan/valve cycle operation, the thermostat cycles the fan and control valve. The fan runs intermittently unless the speed control switch is in the off position. Valve is not included in the control package price.

Two pipe control: Fan cycled or fan/valve cycled	
24V power only	
Package number	Thermostat description
2F4T	On/off system switch and 24V three-speed fan control
2V4T	24V three-speed thermostat continuous fan control
2V43	24V three-speed switch

**Notes:**

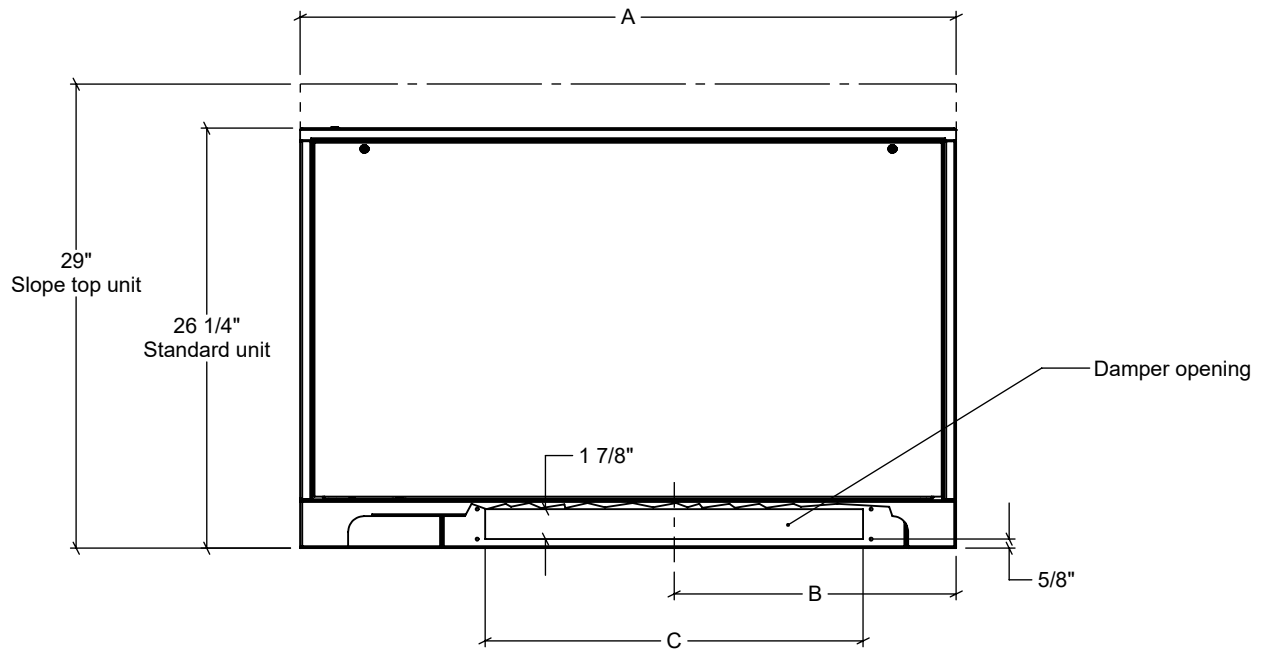
- A means of relieving pump head pressure must be accounted for when two-way valves are used with an automatic thermostat package
- Three additional 24V relays are included for a completely low voltage control package option
- The fan cycles with demand for heating, but if the system switch is off, the fan is off
- Remote temperature sensors are recommended with all unit mounted thermostats for improved temperature control

## Miscellaneous control packages

Package number	Package description	Fan motor speed switch
24FC	24V fan center (1 transformer and 1 fan relay for field controls)	No
24VT	Unit mounted 40VA, 120V/24V transformer with 120V pre-wired and 24V ready for field wiring	No
24RP	Unit mounted relay pack includes a 40VA, 120V/24V transformer and three 24V relays with 120V pre-wired and 24V ready for field wiring	No

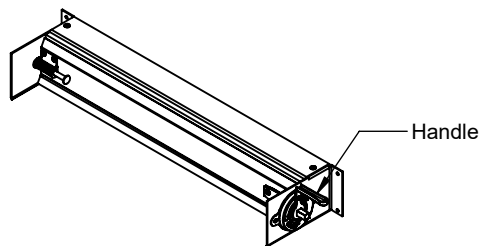
# Dimensions and data

## Damper

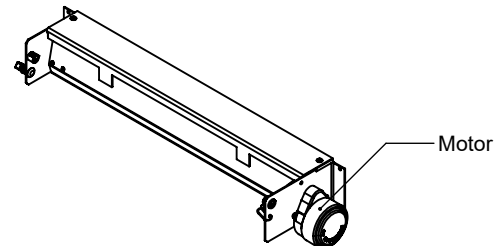


**Front View**

(left hand unit shown, right hand unit opposite of shown)



**Manual damper**



**Motorized damper**

### Dimensional data

Unit size	A	B	C
02	29	11-5/8	15
03	35	14-5/8	13
04	41	17-5/8	23-5/8
06	53	23-5/8	23-5/8
08	59	26-5/8	33-5/8
10	67	30-5/8	33-5/8
12	77	35-5/8	33-5/8

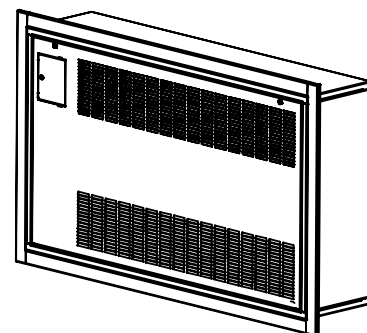
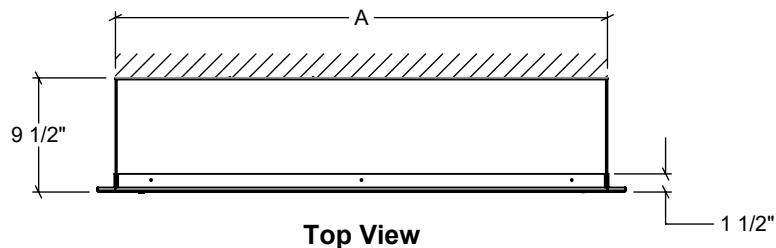
### Notes:

- Damper motor/manual handle always on right side when viewing unit from front.
- Available for models RFF and RFS only.
- All listed dimensions are approximate and are subject to change without notice.
- Modifications to the product specifications must be accepted by Zehnder at its base office.
- See [www.zehnder-rittlings.com](http://www.zehnder-rittlings.com) for any recent updates or changes.

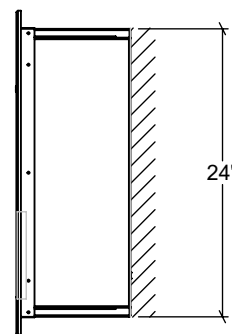
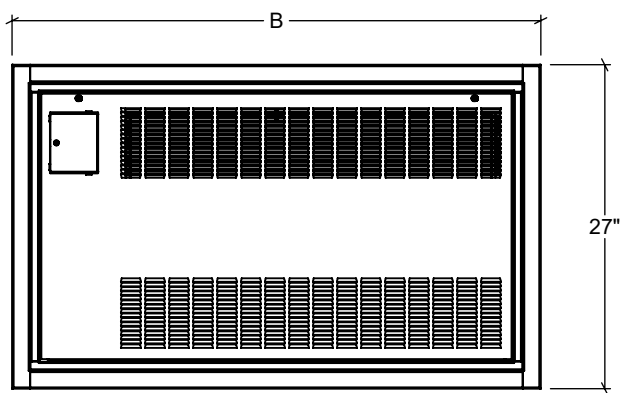
# Dimensions and data

Wall seal kit

Ships loose for field mounting



RCW-420 shown



Dimensional data		
Unit size	A	B
02	29	32
03	35	38
04	41	44
06	53	56
08	59	62
10	67	70
12	77	80

**Notes:**

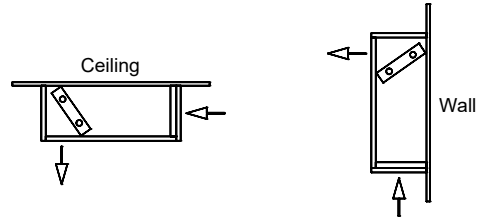
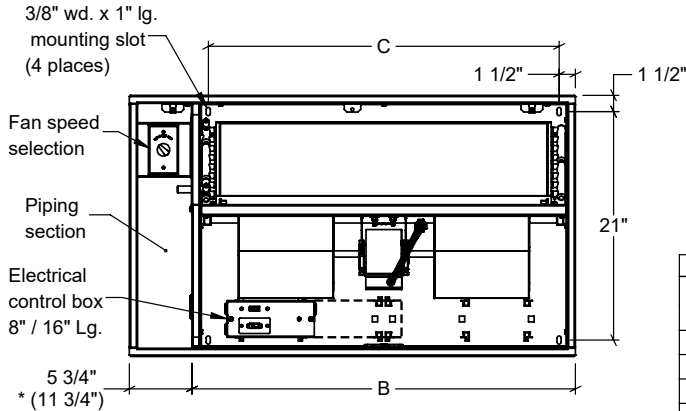
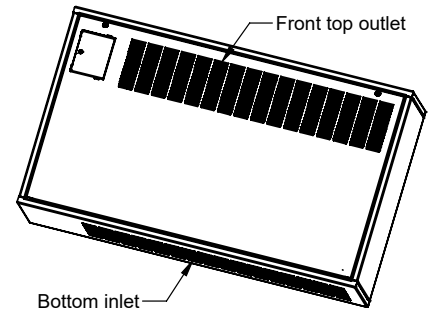
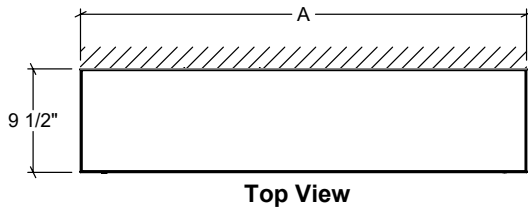
- For fully recessed units locate frame flush with front.
- For partially recessed units locate frame as needed.
- Use sheet metal screws (by others) to secure trim frame to the unit.
- See [www.zehnder-rittlng.com](http://www.zehnder-rittlng.com) for any recent updates or changes.

# Rittling Cabinet Unit Heater

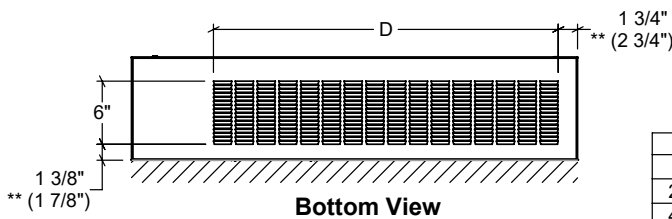
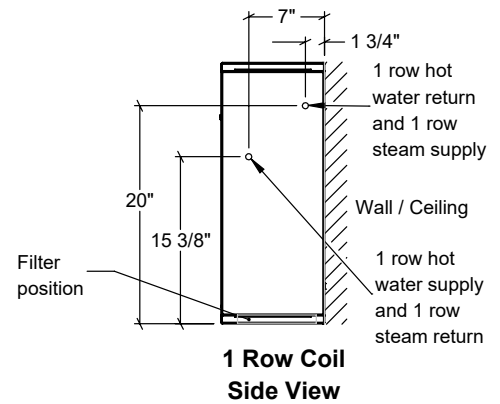
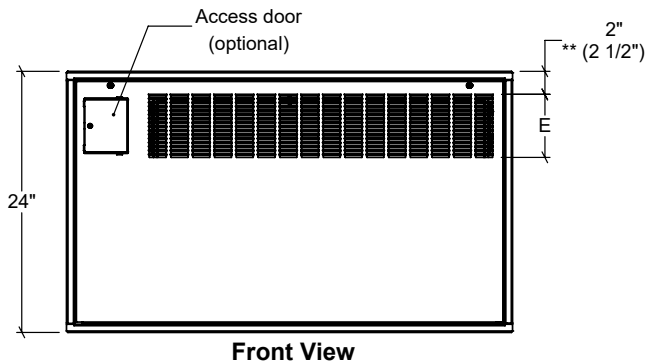
## Submittal Data

Model: RCW-380

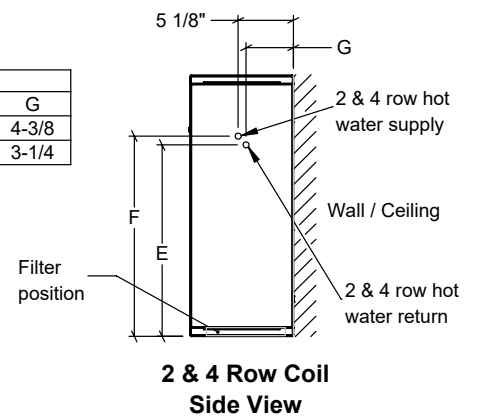
Dimensions and Data



Unit size	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5



Dimensional data			
Coil	E	F	G
2 Row	17-5/8	18-3/8	4-3/8
4 Row	17-7/8	19-1/8	3-1/4



**Notes:**

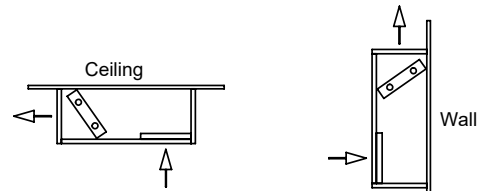
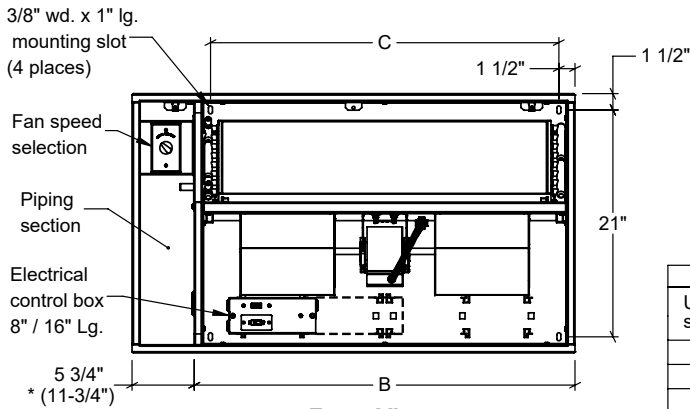
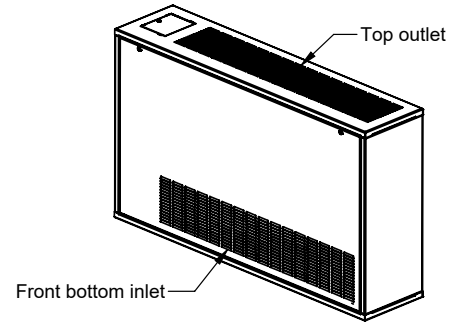
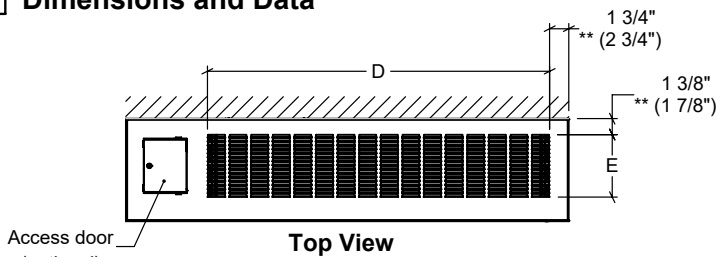
- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater

## Submittal Data

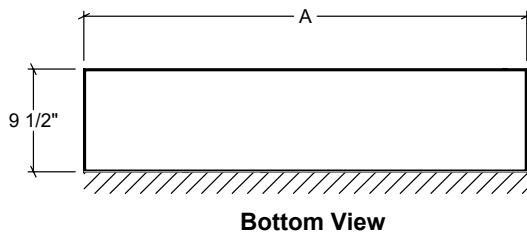
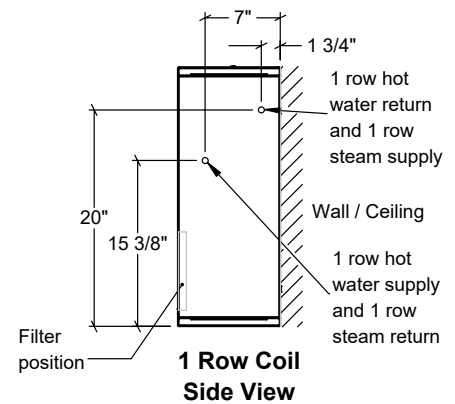
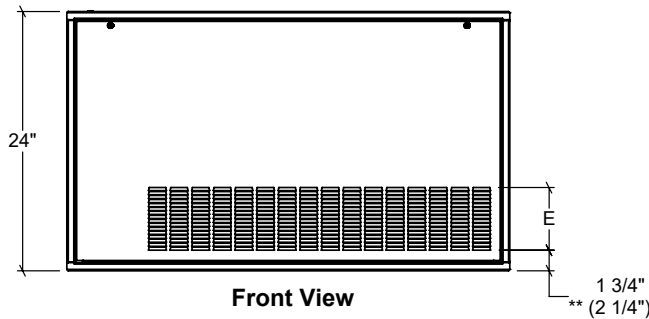
Model: RCW-400

### □ Dimensions and Data

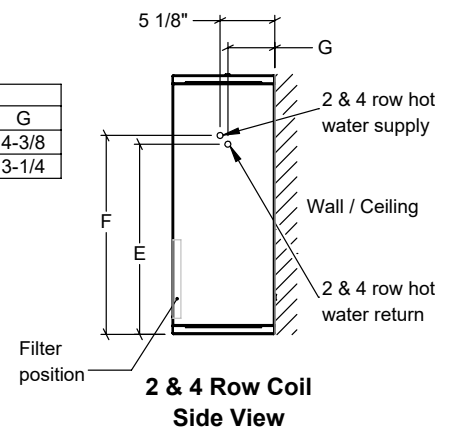


Unit size	A		B	C	Louvers		** Duct/Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5

**Front View**  
(less front panel)  
\* Optional end pocket extension



Dimensional data			
Coil	E	F	G
2 Row	17-5/8	18-3/8	4-3/8
4 Row	17-7/8	19-1/8	3-1/4



**Notes:**

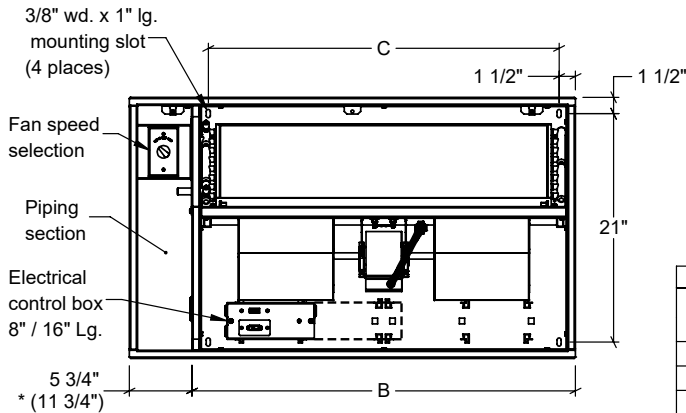
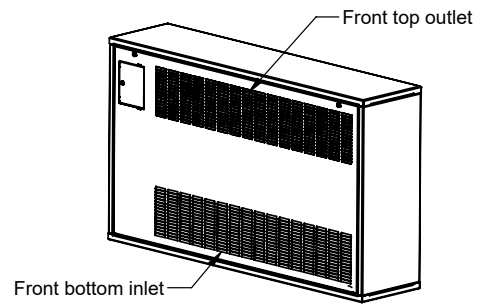
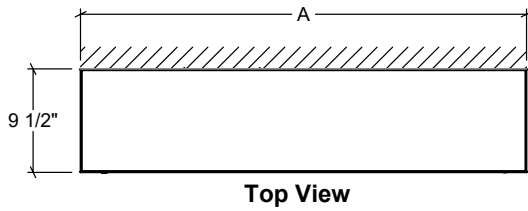
- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater

## Submittal Data

Model: RCW-420

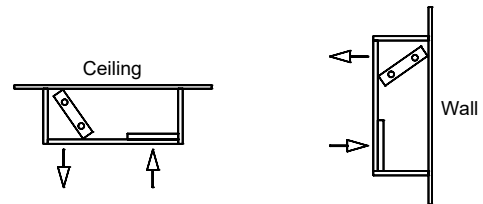
Dimensions and Data



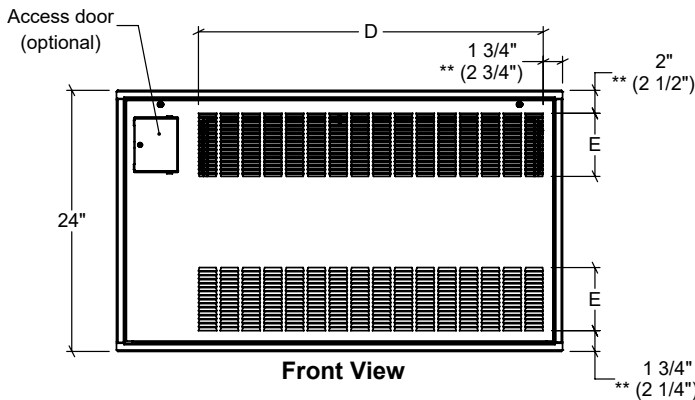
**Front View**

(less front panel)

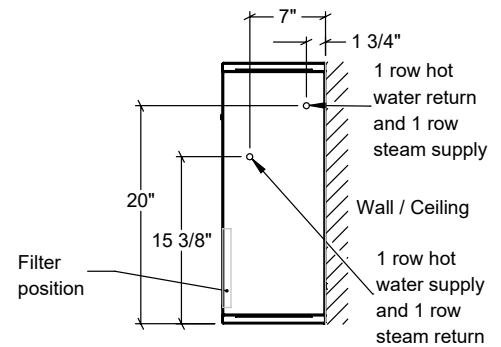
\* Optional end pocket extension



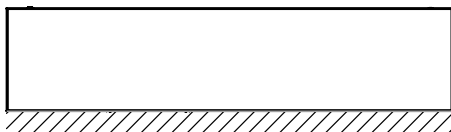
Unit size	Dimensional data							
	A		B	C	Louvers		** Bargrille	
Std.	* 6" Ext	D			E	D	E	
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5



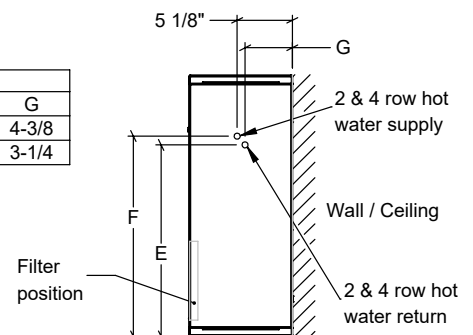
**Front View**



**1 Row Coil Side View**



Coil	Dimensional data		
	E	F	G
2 Row	17-5/8	18-3/8	4-3/8
4 Row	17-7/8	19-1/8	3-1/4



**2 & 4 Row Coil Side View**

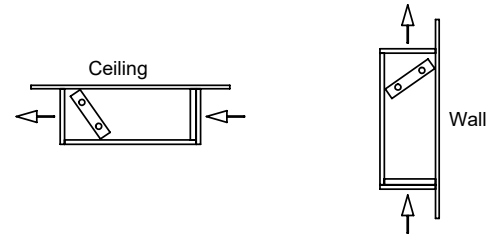
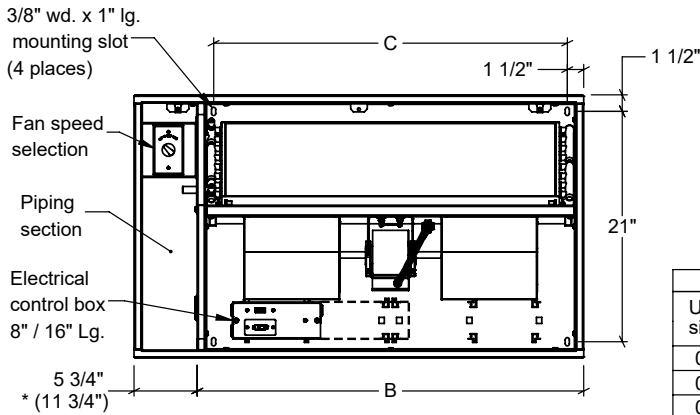
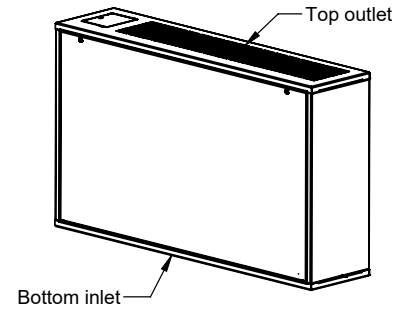
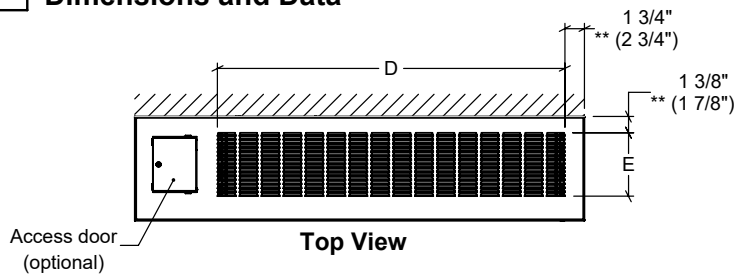
**Notes:**

- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

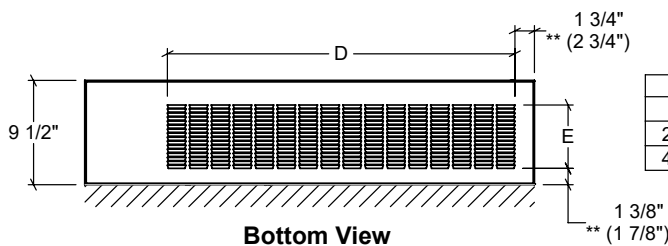
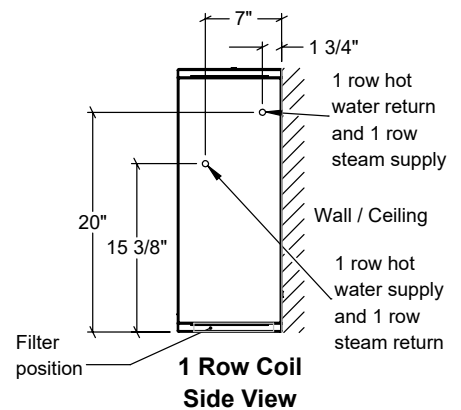
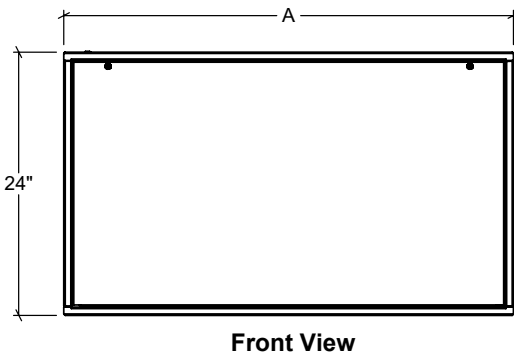
# Rittling Cabinet Unit Heater Submittal Data

Model: RCW-430

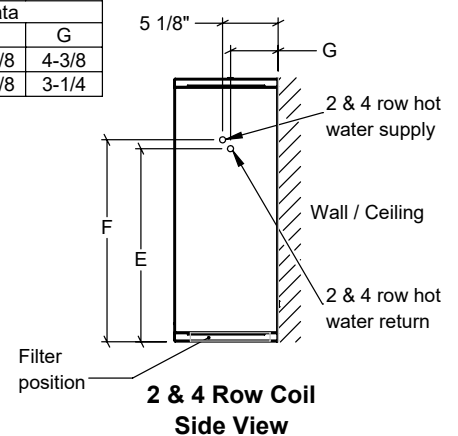
## ☐ Dimensions and Data



Unit size	Dimensional data							
	A		B	C	Louvers		** Duct/Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5



Coil	Dimensional data		
	E	F	G
2 Row	17-5/8	18-3/8	4-3/8
4 Row	17-7/8	19-1/8	3-1/4



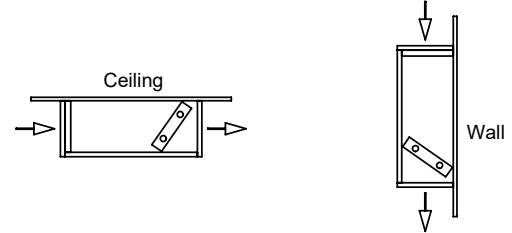
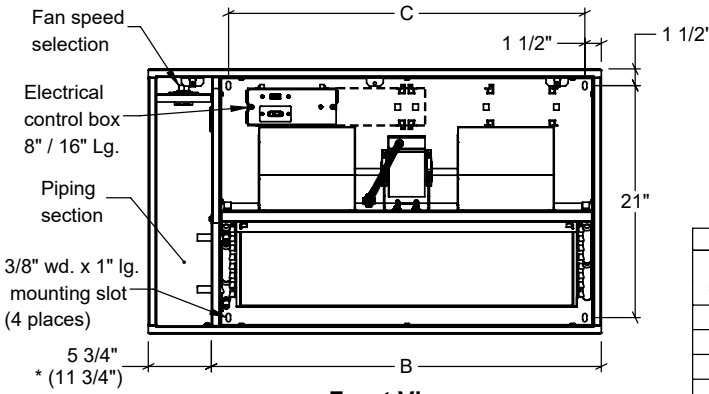
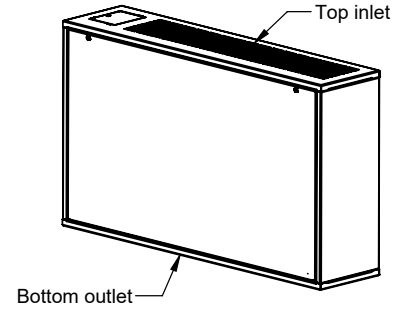
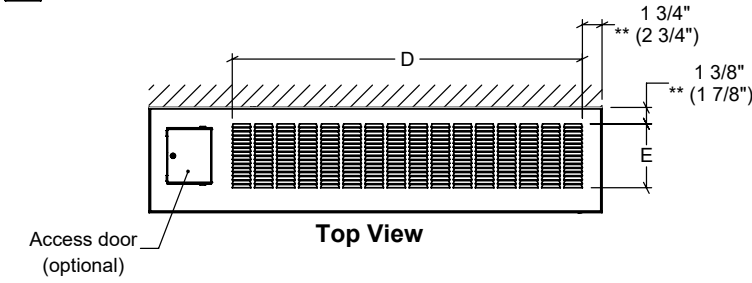
### Notes:

- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater Submittal Data

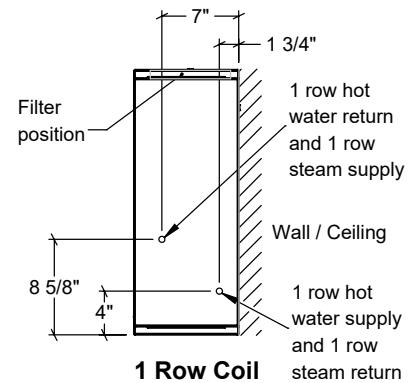
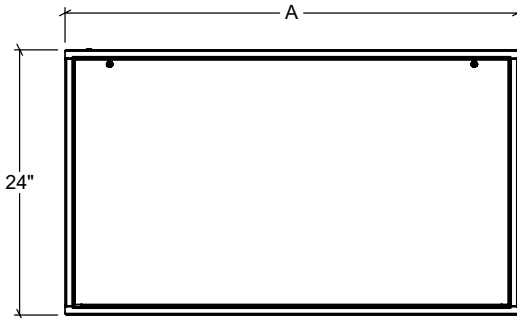
Model: RCWI-290

## ☐ Dimensions and Data

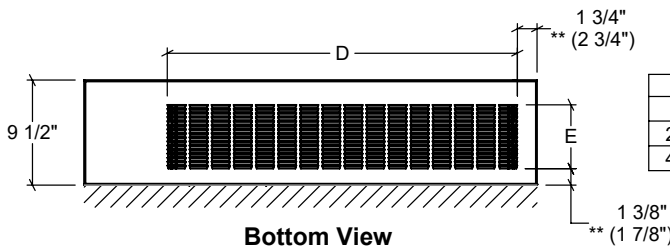


Unit size	Dimensional data							
	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5

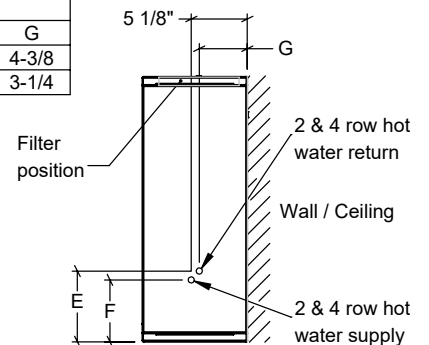
**Front View**  
(less front panel)  
\* Optional end pocket extension



**1 Row Coil Side View**



Dimensional data			
Coil	E	F	G
2 Row	6-3/8	5-5/8	4-3/8
4 Row	6-1/8	4-7/8	3-1/4



**2 & 4 Row Coil Side View**

### Notes:

- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

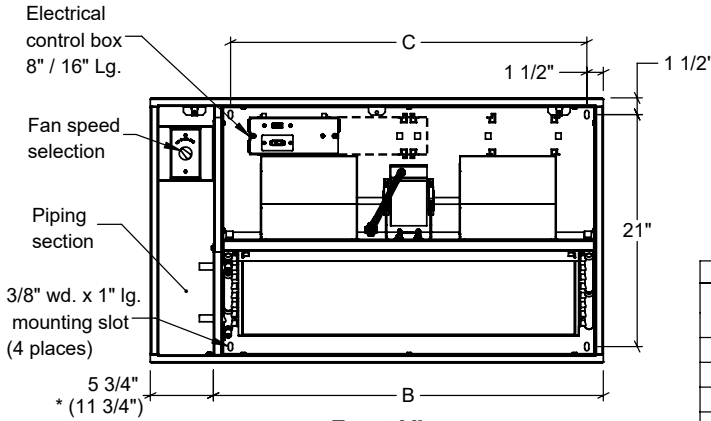
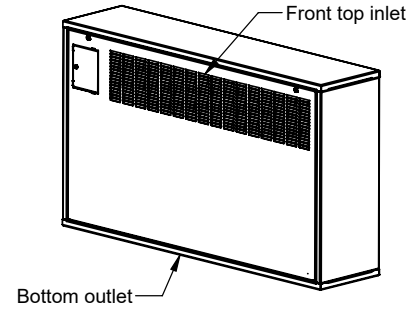
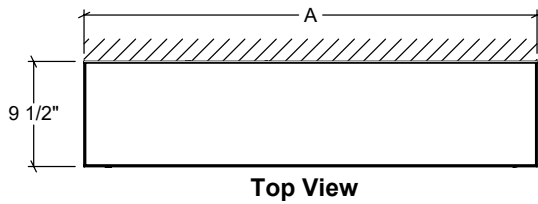


# Rittling Cabinet Unit Heater

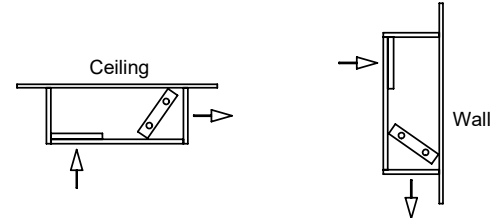
## Submittal Data

Model: RCWI-300

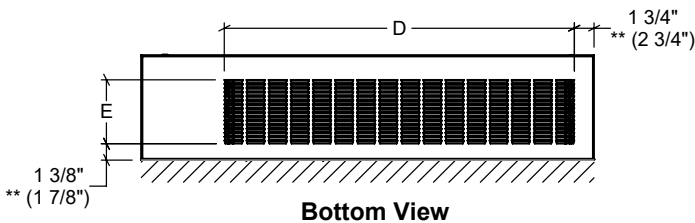
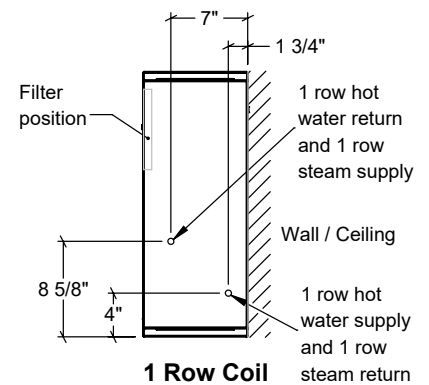
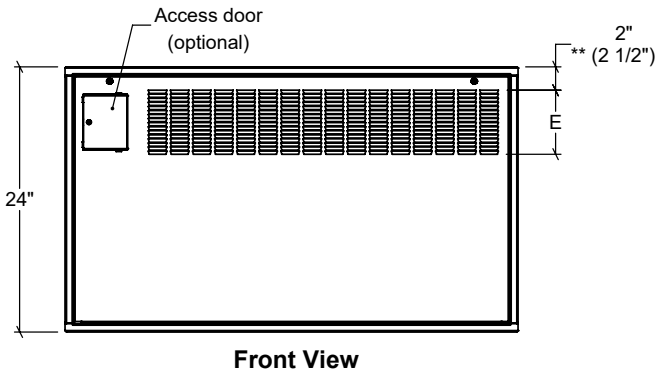
Dimensions and Data



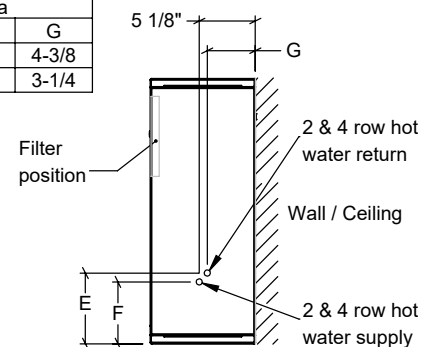
**Front View**  
(less front panel)  
\* Optional end pocket extension



Unit size	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5



Dimensional data			
Coil	E	F	G
2 Row	6-3/8	5-5/8	4-3/8
4 Row	6-1/8	4-7/8	3-1/4



**Notes:**

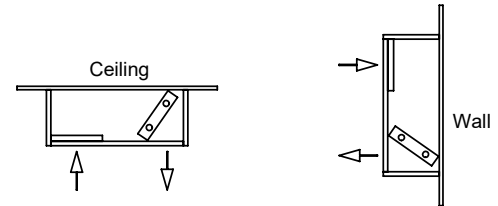
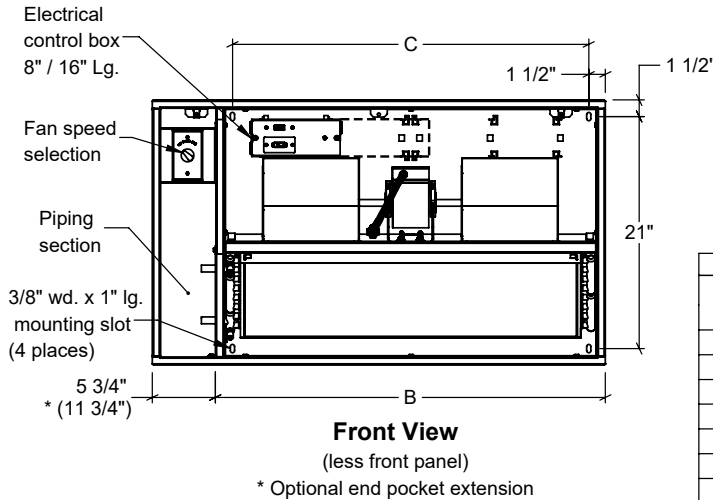
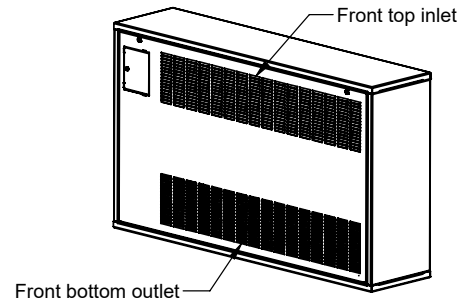
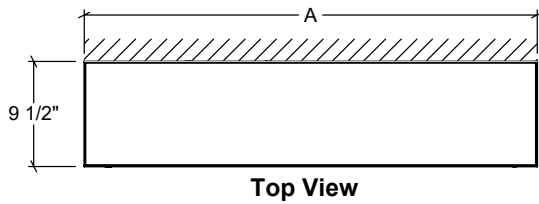
- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater

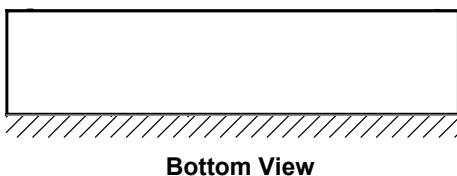
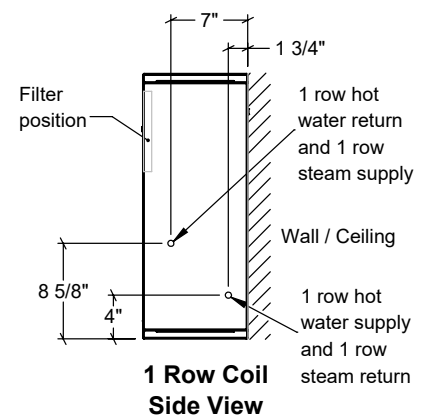
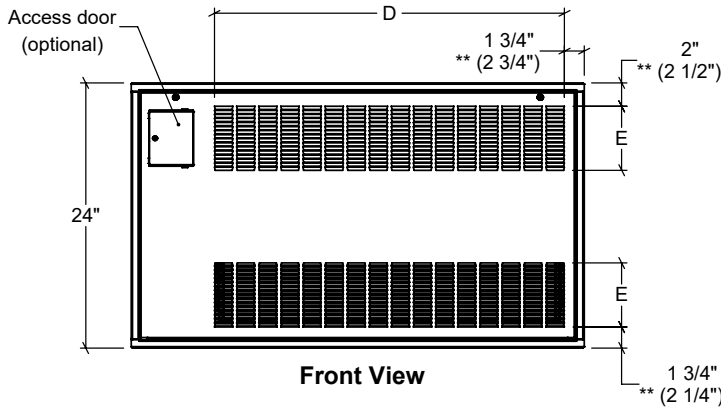
## Submittal Data

Model: RCWI-350

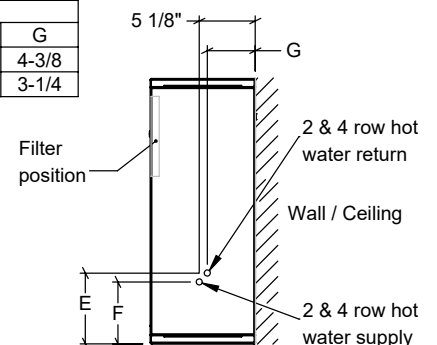
Dimensions and Data



Unit size	Dimensional data							
	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5



Dimensional data			
Coil	E	F	G
2 Row	6-3/8	5-5/8	4-3/8
4 Row	6-1/8	4-7/8	3-1/4



**Notes:**

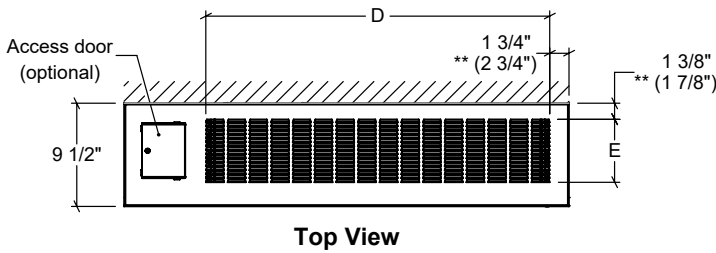
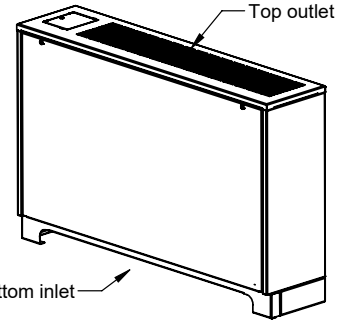
- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater

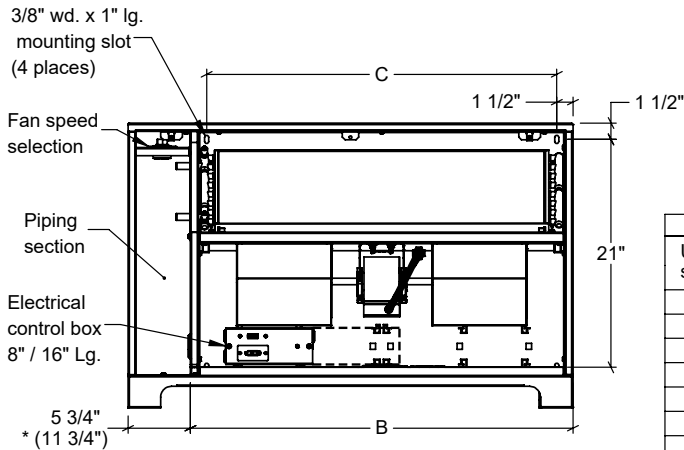
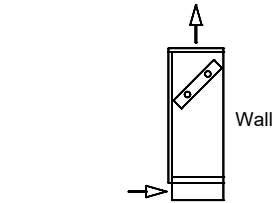
## Submittal Data

Model: RFF-200

Dimensions and Data



**Top View**

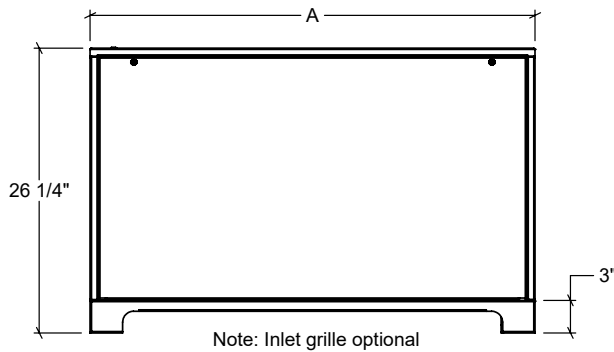


**Front View**

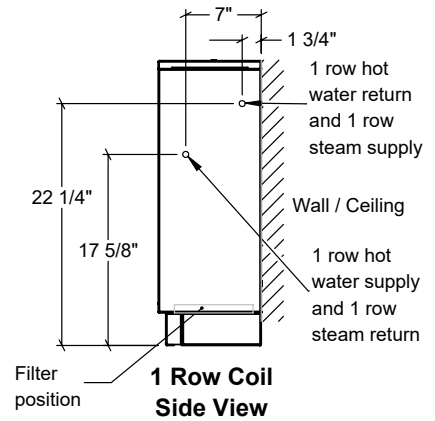
(less front panel)

\* Optional end pocket extension

Unit size	Dimensional data							
	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5

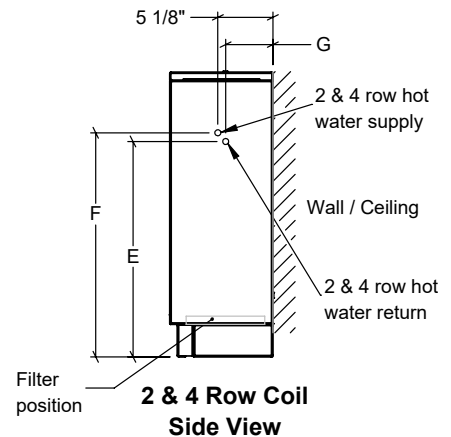


**Front View**



**1 Row Coil Side View**

Dimensional data			
Coil	E	F	G
2 Row	19-7/8	20-5/8	4-3/8
4 Row	20-1/8	21-3/8	3-1/4



**2 & 4 Row Coil Side View**

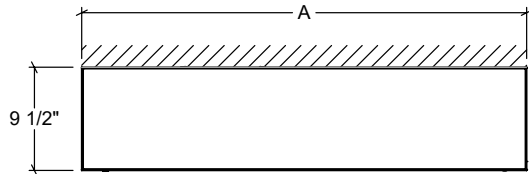
**Notes:**

- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Inlet grille optional
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

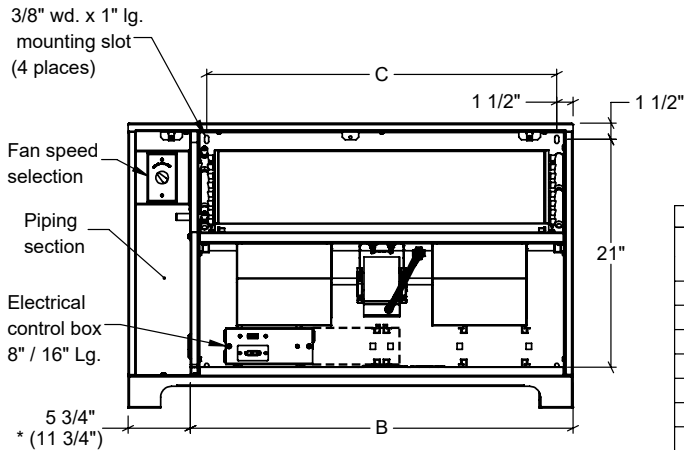
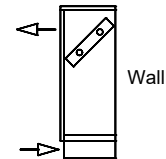
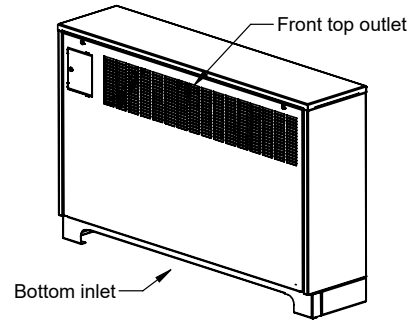
# Rittling Cabinet Unit Heater Submittal Data

Model: RFF-220

Dimensions and Data



Top View

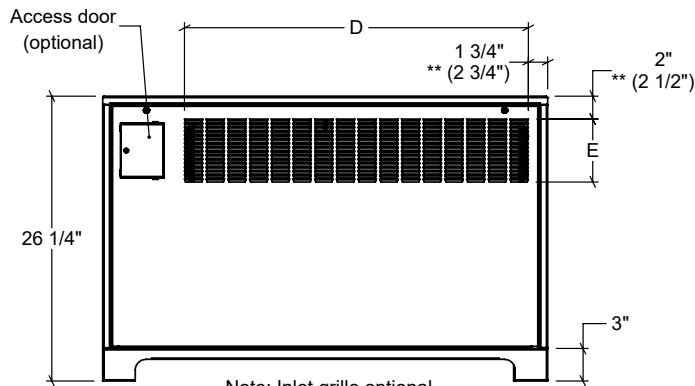


Front View

(less front panel)

\* Optional end pocket extension

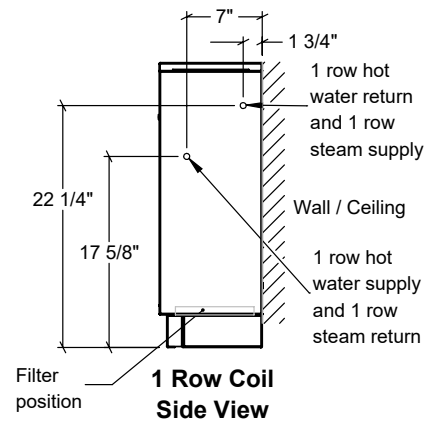
Unit size	Dimensional data							
	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5



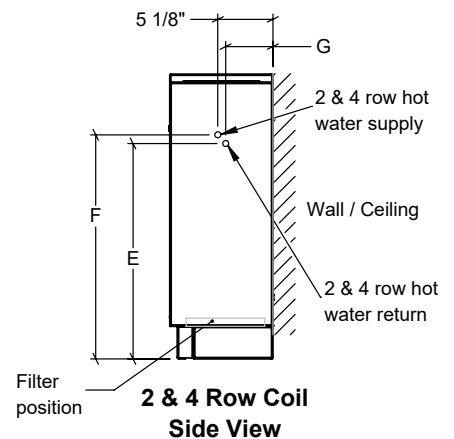
Front View

Note: Inlet grille optional

Dimensional data			
Coil	E	F	G
2 Row	19-7/8	20-5/8	4-3/8
4 Row	20-1/8	21-3/8	3-1/4



1 Row Coil Side View



2 & 4 Row Coil Side View

**Notes:**

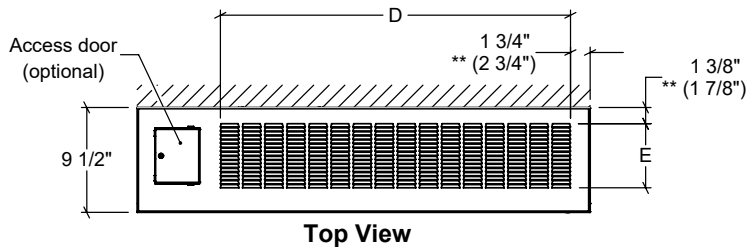
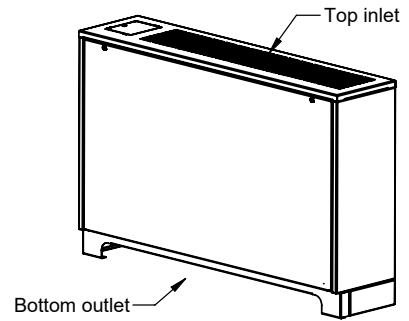
- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Inlet grille optional
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater

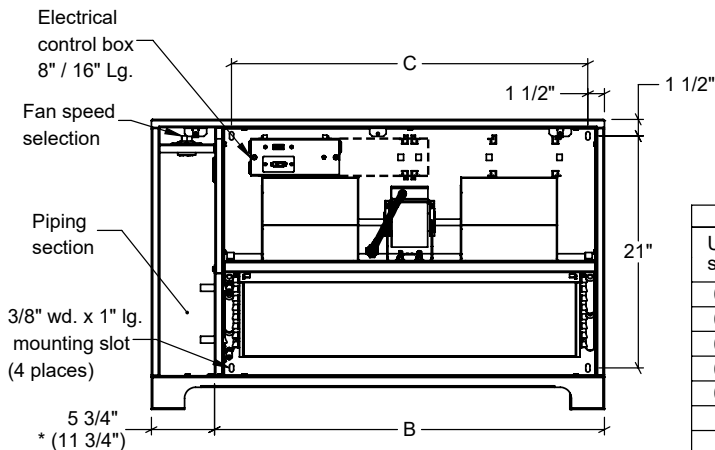
## Submittal Data

Model: RFFI-240

Dimensions and Data



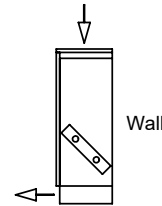
Top View



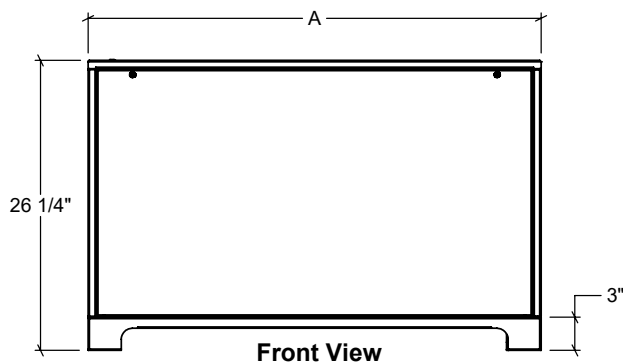
Front View

(less front panel)

\* Optional end pocket extension

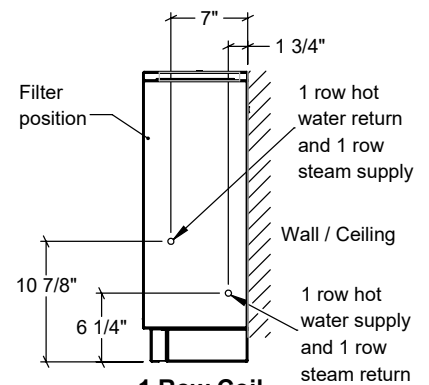


Unit size	Dimensional data							
	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5

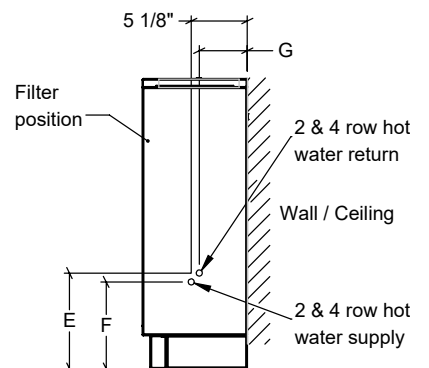


Front View

Dimensional data			
Coil	E	F	G
2 Row	8-5/8	7-7/8	4-3/8
4 Row	8-3/8	6-1/8	3-1/4



1 Row Coil Side View



2 & 4 Row Coil Side View

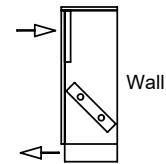
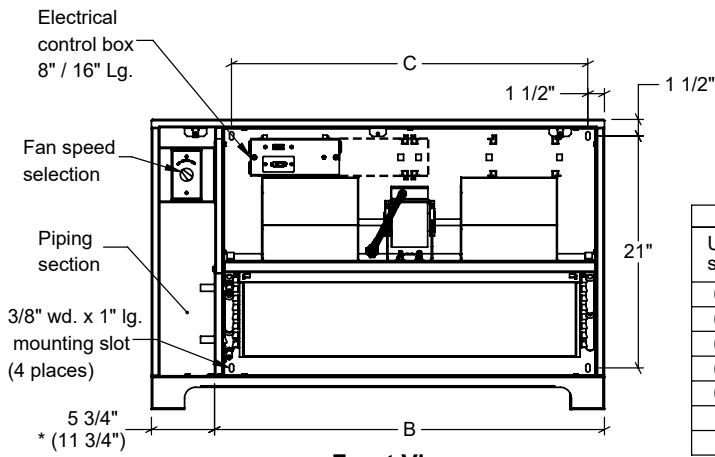
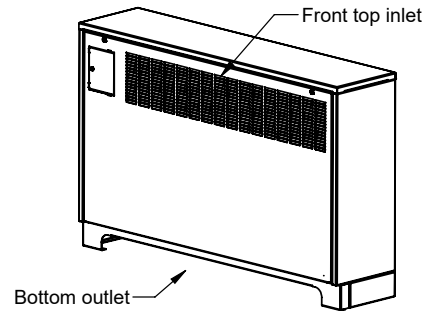
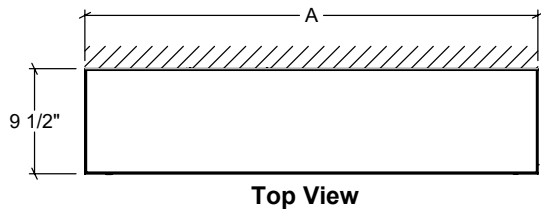
**Notes:**

- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Inlet grille optional
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater Submittal Data

Model: RFFI-250

Dimensions and Data

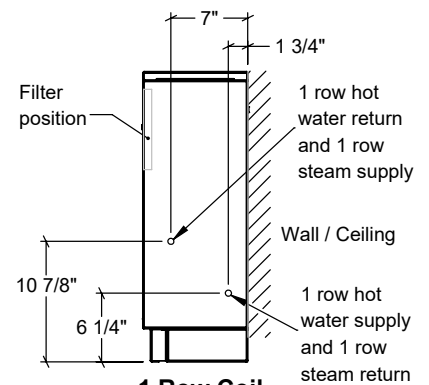
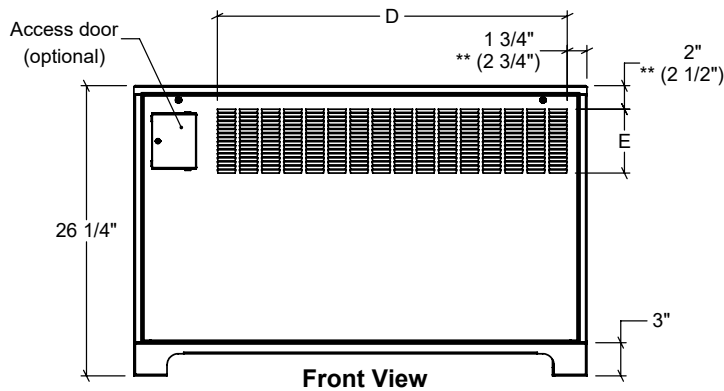


Unit size	Dimensional data							
	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5

**Front View**

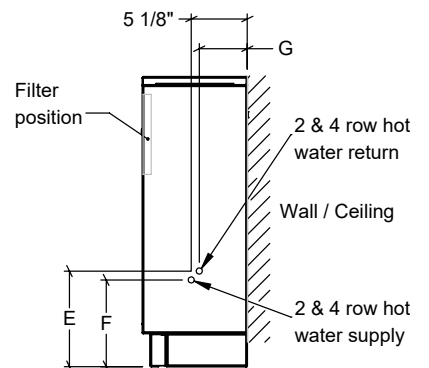
(less front panel)

\* Optional end pocket extension



**1 Row Coil Side View**

Dimensional data			
Coil	E	F	G
2 Row	8-5/8	7-7/8	4-3/8
4 Row	8-3/8	6-1/8	3-1/4



**2 & 4 Row Coil Side View**

**Notes:**

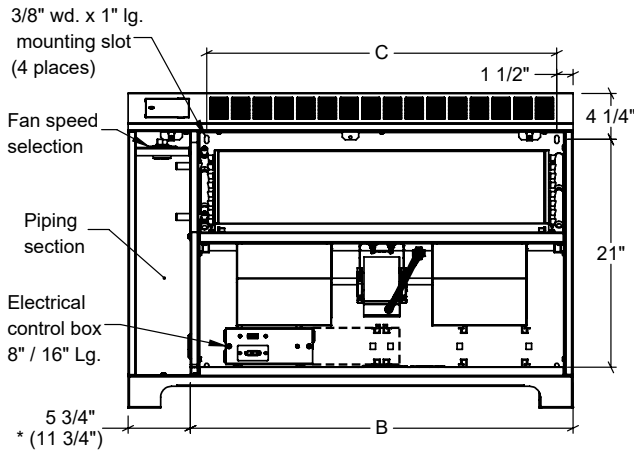
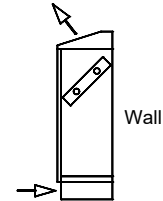
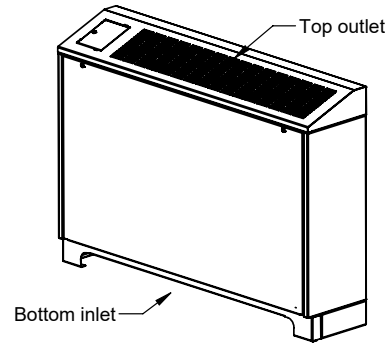
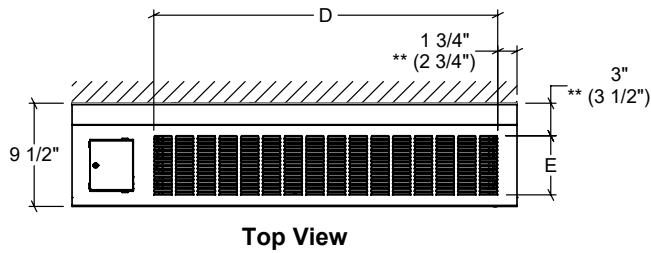
- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Inlet grille optional
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater

## Submittal Data

Model: RFS-200

Dimensions and Data

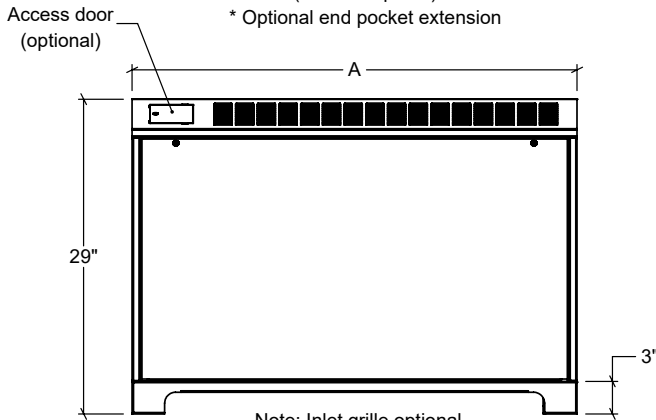


Unit size	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5

**Front View**

(less front panel)

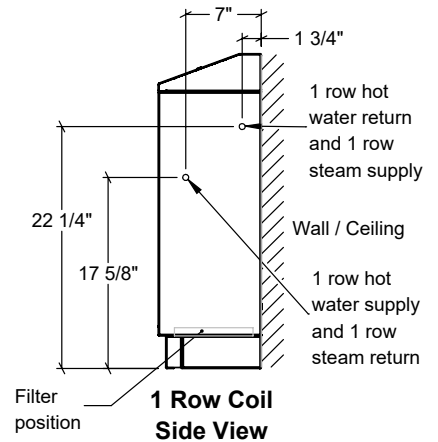
\* Optional end pocket extension



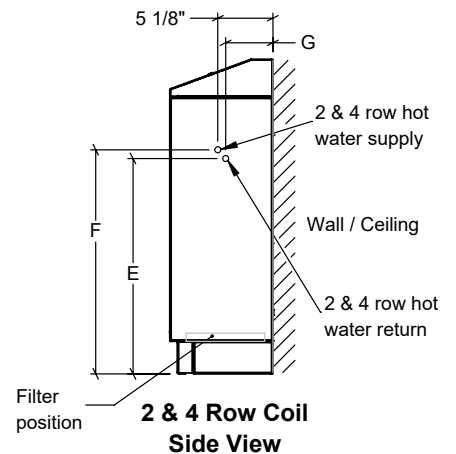
Note: Inlet grille optional

**Front View**

Dimensional data			
Coil	E	F	G
2 Row	19-7/8	20-5/8	4-3/8
4 Row	20-1/8	21-3/8	3-1/4



**1 Row Coil Side View**



**2 & 4 Row Coil Side View**

**Notes:**

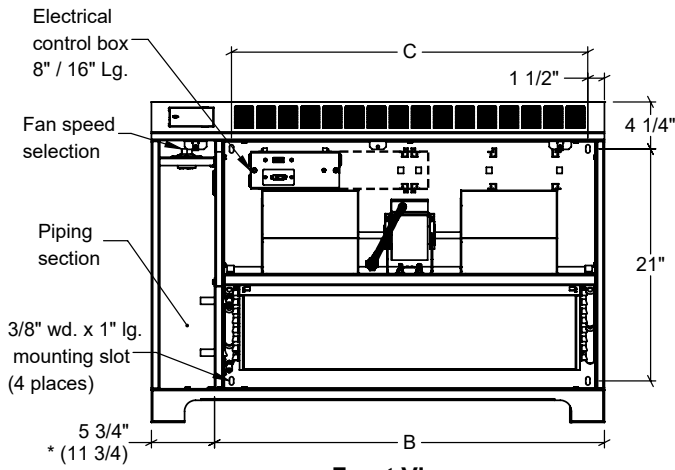
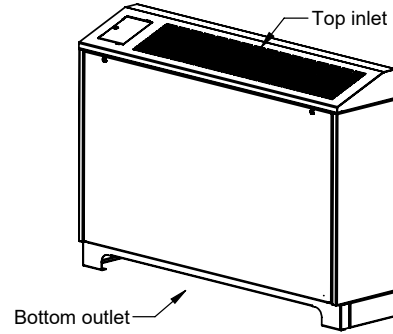
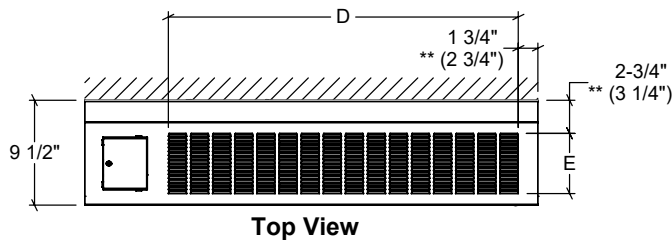
- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Inlet grille optional
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes

# Rittling Cabinet Unit Heater

## Submittal Data

Model: RFSI-240

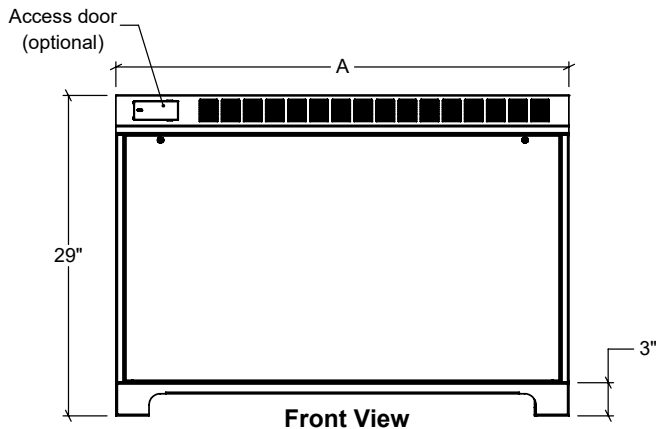
Dimensions and Data



Dimensional data

Unit size	A		B	C	Louvers		** Bargrille	
	Std.	* 6" Ext			D	E	D	E
02	29	35	23-1/4	20-1/4	20	6	18	5
03	35	41	29-1/4	26-1/4	26	6	24	5
04	41	47	35-1/4	32-1/4	32	6	30	5
06	53	59	47-1/4	44-1/4	44	6	42	5
08	59	64	53-1/4	50-1/4	50	6	48	5
10	67	73	61-1/4	58-1/4	58	6	56	5
12	77	83	71-1/4	68-1/4	68	6	66	5

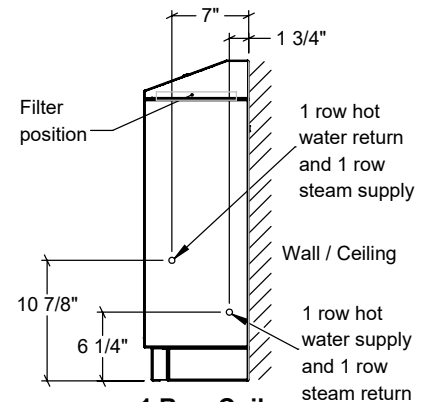
**Front View**  
(less front panel)  
\* Optional end pocket extension



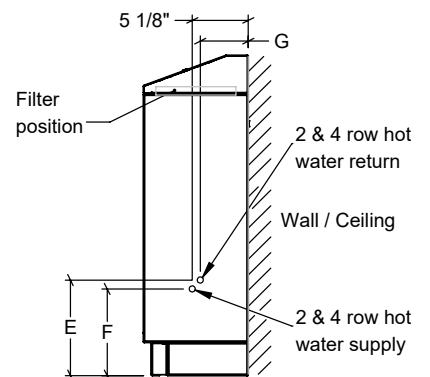
**Front View**

Dimensional data

Coil	E	F	G
2 Row	8-5/8	7-7/8	4-3/8
4 Row	8-3/8	6-1/8	3-1/4



**1 Row Coil Side View**



**2 & 4 Row Coil Side View**

**Notes:**

- 1, 2, and 4 row coil supply and return connections are 1/2" nominal (5/8" OD) on all sizes
- Inlet grille optional
- Unit shown with left hand piping connections
- Right hand piping connections available as an option
- Piping hand determined when facing the air outlet
- All listed dimensions are approximate and are subject to change without notice
- Modifications to the product specifications must be accepted by Zehnder at its base office
- See [www.zehnder-rittling.com](http://www.zehnder-rittling.com) for any recent updates or changes



# Mechanical Specifications

## General

- Furnish and install Cabinet Unit Heaters where indicated on the plans and in the specifications, with required mounting components and accessories. All units shall be capable of meeting or exceeding the scheduled capacities for heating and air delivery. Units shall be ETL certified for the United States and Canada in compliance with UL/ANSI Standard 1995 and CSA C22.2 No. 236-95.

## Construction

- All units shall have exterior front, top and end panels fabricated of not less than 16-gauge cold rolled steel [14-gauge steel]. The front panel shall be attached with tamper-proof Allen-head to allow for easy removal and access for service. The front panel shall be hinged providing full swing through 90° including removable retaining chain(s) to prevent the panel from swinging fully open accidentally. Side panels shall be removable for access to controls and piping within the end pockets, if required. End pocket shall be no less than 5 3/4" [extended end pockets shall be no less than 11 3/4"] in width.
- [Provide a grille in the return air opening (RFF, RFS)]
- All exposed units shall include a recessed stamped louver discharge grille. Louver discharge grille shall be reverse stamped, leaving a smooth exterior surface. Liquid coat paint shall not be acceptable.
- Louvered panel shall be supplied with flush, hinged access door with slotted cam-lock fasteners. [tamper-proof Allen-head security fasteners.]
- Recessed units shall be provided with a wall/ceiling seal assembly. The assembly shall provide a finished appearance to the wall/

Flush-mounted, quarter-turn tamper-resistant fasteners included as standard



ceiling.

- All ducted units shall have a minimum 1" duct collar on the discharge or return.
- Option: Adjustable leveling legs, two on each base leg, shall be provided where indicated on drawings or schedules (RFF, RFFI, RFS, RFSI).
- Option: Insulation must meet all requirements of ASTM C1071 (including C665), UL 181 for erosion, and carry a 25/50 rating for flame spread/smoke developed per ASTM E-84, UL 723 and NFPA 90A.

## Painted finish

- All painted cabinet exterior panels shall be finished with a standard epoxy powder coat paint. Colors can be selected from the Zehnder Rittling Color Chart. Liquid coat paint shall not be acceptable.
- Custom colors are also available with the submission of a color chip for color match.

## Power

- Units shall not exceed scheduled power consumption.

## Fan and motor

- Unit fan shall be dynamically balanced, forward curved, DWDI centrifugal type constructed of galvanized steel for corrosion resistance. Motors shall be permanent split-capacitor

[electronically commutated high-efficiency, programmable brushless DC], totally enclosed, tap wound for 3-speed, permanently lubricated sleeve bearing, type with automatic reset integral thermal overload protection. High static motors are available for ducted applications. Shaded pole motors are not acceptable. Single speed motors are not acceptable. Prior to shipping, all motors shall be assembled, factory tested and installed in the unit

- The fan/motor assembly shall be removable and serviceable through the front panel. Each fan/motor assembly shall be fastened by no more than 2 screws. The motors shall have quick connects to allow service and removal without the need for tools.

## Coils

- All heating coils shall optimize rows to meet the specified capacity. Coils shall have 5/8" OD, 1/2" nominal seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and aluminum fin. Minimum copper tube thickness shall be 0.016".
- Fins shall have high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover. Minimum fin thickness shall be 0.0045". Lanced fins shall not be acceptable.

# Mechanical Specifications

- All coils shall be tested at 350 PSIG air pressure under water, and rated for a maximum 300 PSIG working pressure at 200°F. Coils shall be circuited for counter flow to maximize unit efficiency.
- All water coils shall be designed to connect with ½" nominal pipe connections.
- Coil casing shall be fabricated from galvanized steel.
- Steam coils shall be standard single tube steam type suitable for temperatures above 35°F and 15 PSIG steam pressure.
- All water coils shall be provided with a manual air vent [automatic air vent] fitting to allow for coil venting.

## Filters

- All units shall be furnished with a minimum 1" nominal glass fiber throwaway [1" pleated MERV 8] filter.
- Filters shall be tight fitting to prevent air bypass.

## Electrical

- Units shall be furnished with single point power connection. Provide an electrical control board for motor and other electrical terminations using push fit terminal connections. Provide a 3-speed fan control switch with off, high, medium and low speeds.
  - ◆ Option: Provide 24 VAC fan relays with 40 VA transformer as integral part of control board. Fan relays designed to operate in conjunction with factory provided [field provided] 24 V thermostat. Fan relays designed to accept 120, 208, 220, or 230 input power. Relays shall operate with generic non-digital thermostat designed to control up to three independently energized fan speeds.
  - ◆ Option: Provide a line voltage

wall thermostat, shipped loose for remote mounting. Adjustable setpoint dial included.

- ◆ Option: Provide a line voltage aquastat, shipped loose for remote mounting on the incoming supply piping. Adjustable setpoint dial included.
- ◆ Option: Provide a service disconnect switch to isolate power from the unit during maintenance.
- ◆ Option: Provide a manual motor starter to provide overload protection for the motor.
- Primary internal wiring and testing shall be conducted at the factory. All units shall be shipped with wiring diagrams.

## Piping packages

- Provide a standard factory assembled valve piping package to consist of a 2 or 3-way, on/off, motorized electric control valve and two ball isolation valves.
- Control valves shall be piped normally closed to the coil. Control valves shall be wired to junction box or unit mounted thermostat, when provided, through quick connects to allow service and replacement of valves. Maximum entering water temperature on the control valve shall be 200°F, and maximum operating pressure shall be 300 PSIG.
  - ◆ Option: Provide an adjustable flow control device for each piping package.
- Piping packages shall be completely factory assembled including interconnecting pipe, factory tested for leaks and shipped loose for field installation.

## Outside air damper

- Provide a manual [two position motorized] outside air single blade damper integral to the unit. [A synchronous motor interlocked

with the fan shall open the outside air damper automatically when the fan starts. If there is a loss in power or the blower stops, the damper shall return to a closed position.]

# Warranty

Zehnder guarantees its products to be free from defects in material and workmanship for a period of two years from date of shipment from our Buffalo, New York factory.

Should there be any defects in the good(s), the purchaser should promptly notify Zehnder. Upon receipt of written consent from Zehnder, the purchaser shall return the defective good(s) to the factory for inspection with freight prepaid. If inspection shows the goods to be defective, Zehnder will at its discretion repair or replace the said item(s).

Defects arising from damage due to shipment, improper installation, negligence or misuse by others are not covered by this warranty.

# always the best climate

Our mission is to provide a healthy indoor climate with top quality solutions. Living spaces are kept at a comfortable temperature by our radiators and heating & cooling ceilings whereas our ventilation solutions make sure that you can breathe fresh clean air 24/7.

**zehnder**



global presence in over 70 countries

## Your global partner for indoor climate

### Trusted partner

We provide our customers with tailored services from planning to installation of excellent solutions for the best indoor climate since 1895.



### Know what's next

Consistent focus on innovation has always been the motor for our business. We strive to provide intelligent solutions for ventilation, heating, and cooling.



### Swiss quality and precision

Swiss quality and precision are reflected in all our products. Our design standards create timeless elegance in living spaces for yesterday, today, and tomorrow.



### Know why, know how

It is our ongoing mission to share our expertise and know how with our customers by providing expert trainings. Our dedicated Zehnder academies bring indoor climate to life.



