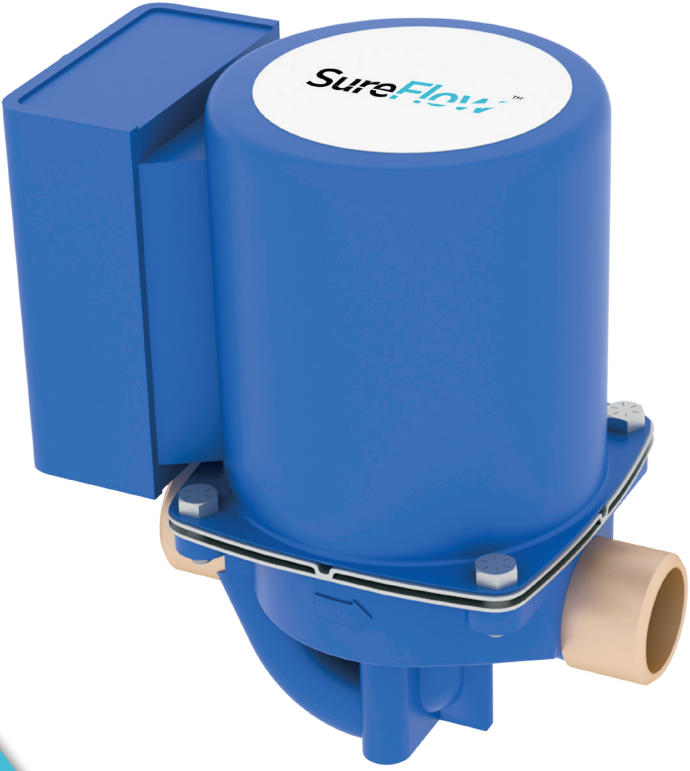


SureFlow® Series
FAN COIL TECHNICAL CATALOG



SureFlow™

Build your reputation on ours

It is the responsibility of the end user to properly characterize and dispose of all waste materials according to applicable regulatory and legal entities. Where reasonable, safe, and compliant with local regulatory and legal requirements, IEC encourages recycling materials when disposing of its products.

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Table of Contents

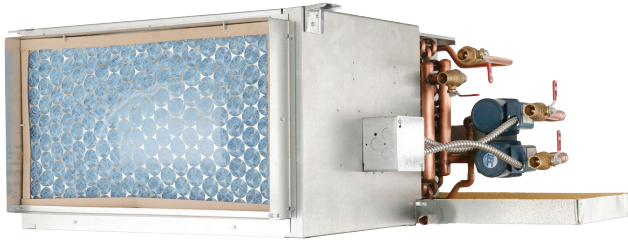
4	The System
5	System Comparison
6	Design Tools
7-10	Portfolios
11-13	Applications
14	Features and Benefits
15-18	Unit Model Keys
19-20	Ratings and Listings
21-22	Hydronic Heating Capacity
23-24	Electric Resistance Heating
25-26	Air/Blower Performance
27-34	Fan Performance Curves for Modular Hi-Rise Series
35-40	Motor Data
41-58	Submittal Data
59	Weights
60	Piping Connections
61-68	Standard Features and Options
69-70	Filters
71-82	Options and Accessories

The System

What is SureFlow®

SureFlow® is an innovative approach to flexible cooling and heating hydronic system design.

Figure 1.



The key component of a SureFlow system is a custom designed fan coil (see Figure 1) with an integrated low watt circulator. The circulator delivers the design waterflow through the coil and back to a primary loop. This allows the individual fan coils to be hydraulically isolated from one another and be decoupled from the distribution primary loop.

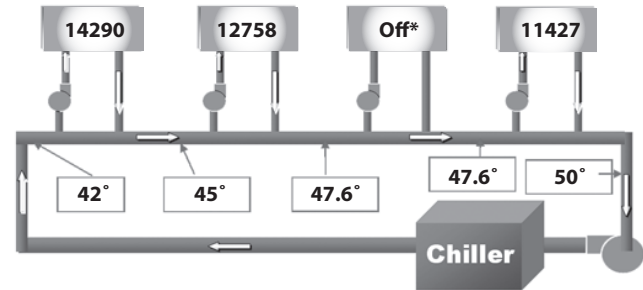
A benefit of this arrangement is the ability to satisfy the comfort requirements of a cooling-only system with one pipe instead of two and for a cooling and heating system with two pipes instead of four.

Since the primary pump is no longer responsible for overcoming the valve and coil losses, and is only responsible for moving the water in the primary loop, the horsepower demand is reduced significantly resulting in energy savings.

How Does SureFlow® Work

Multiple SureFlow® units are placed in series on a primary loop. The primary loop has a constant water flow that is engineered to satisfy the total BTU demands of the loop at peak load conditions.

Figure 2. 48,000 BTU/H; 42°F EWT; 10°F ΔT; 9.6 GPM Primary

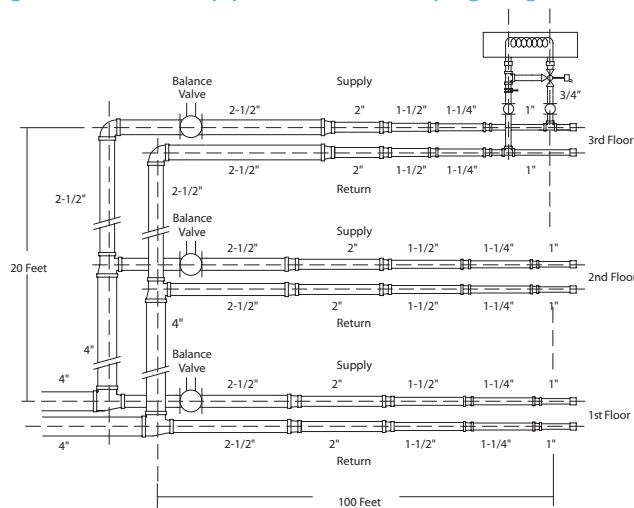


In the example shown in Figure 2, four coils are connected to a loop with a peak load of 48,000 BTU/H. The designer plans for a 10 degree water temperature rise from the loop and configures the primary for 9.6 GPM of water flow with an initial temperature of 42 degrees. The primary loop is set up for constant water flow while the SureFlow units cycle on local thermostat demand. As each unit cycles on, the local circulator “borrows” water for use in the coil and then returns the used water to the loop. The blended water then becomes the inlet water for the next operating unit. Units are selected to operate at the available water temperature.

System Comparison

Parallel Flow vs. SureFlow®

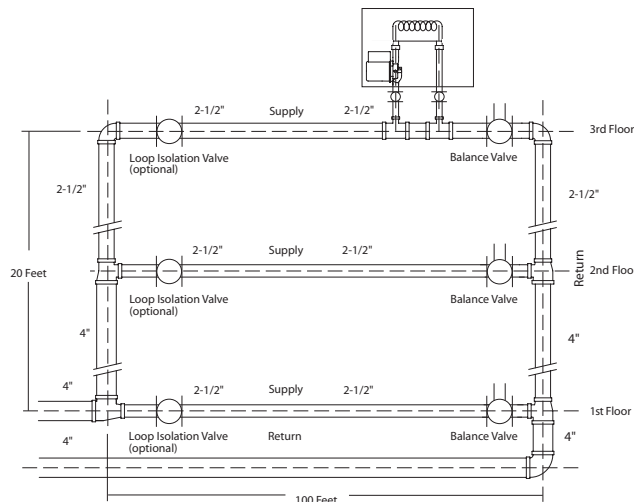
Figure 3. Basic Two-pipe Direct-return Piping Diagram



In parallel flow hydronic systems (see Figure 3), a central pump delivers constant water temperature throughout the building to each fan coil unit. The central pump must overcome system head losses (piping, balancing valves or circuit setters, fittings, accessories, zone control valves) and still produce sufficient pressure to push water through the coil. Unfortunately building diversity causes problems balancing flow at actual operating conditions. Parallel flow systems are “design specific,” making changes in zoning difficult to implement.

SureFlow® System

Figure 4. Single-pipe, Primary/Secondary SureFlow System



In SureFlow® systems, flow controls and zone control valves are removed from the fan coil unit. The central pump moves water past the fan coil units in a primary circuit called a “SureFlow Loop.” The integral circulator delivers the rated flow to each unit and cycles on demand of the local thermostat.

Design Tools

INTERNATIONAL ENVIRONMENTAL Flexible solutions for indoor environments

File Unit Reports Schedule Inputs System Help

Unit Performance | Schedule | Project Information | Loop Information

SureFlow® System

Loop 1

L1C

Chiller LWT (°F) 45.0 Peak Load Total BTUH 102000 Peak Water Flow - GPM 25.0
 Peak Temp Change (°F) 8.2 Sensible BTUH 81600 Pipe Size (inches) 1.50 Nominal OD, Type M Copper
 Target SHR % 80 Actual Total BTUH 100849 Velocity - f/s 4.4 Fluid Water
 Actual LWT (°F) 53.1 Actual Capacity Sensible BTUH 82825

Recalc / Update Loop

L1 - 2-Pipe, Cooling Only		✓	L1-SFU1	L1-SFU2	L1-SFU3	L1-SFU4	L1-SFU5	L1-SFU6	L1-SFU7	L1-SFU8
Tagging Information		System ID	12000	12000	24000	6000	12000	12000	12000	12000
		User ID								
Cooling Load (BTUH)		Total	12000	12000	24000	6000	12000	12000	12000	12000
		Sensible	9600	9600	19200	4800	9600	9600	9600	9600
		Latent	2400	2400	4800	1200	2400	2400	2400	2400
Model & Size			CPF04	CPF04	CPF10	CPF02	CPF04	CPF04	CPF04	CPF04
Coil Rows		Cool	3	3	3	4	4	4	4	4
		Speed	High	High	High	High	High	High	High	High
Fan		ESP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Actual ACFM	470	470	1045	185	460	460	460	460
Cooling Entering Air		DB /WB	80 / 67	80 / 67	80 / 67	80 / 67	80 / 67	80 / 67	80 / 67	80 / 67
Cooling Entering Water °F			45	46	47	48.9	49.4	50.4	51.3	52.2
Unit Cool (BTUH)		Total	12878	12364	23111	6512	12294	11730	11229	10731
		Sensible	9831	9632	19830	4654	10018	9806	9619	9435
		Latent	3047	2732	3281	1858	2276	1924	1610	1296
Sensible to Target %			102.4%	100.3%	103.3%	97.0%	104.4%	102.1%	100.2%	98.3%
All On		All Off								

Print Export Load Schedule Save Schedule

Current Project: App_Guide.dat

Version 5.6.4 © International Environmental Corporation, 2004 - 2008

Design Tools

A SureFlow® Rating Program and Loop Simulator are available for use by the design engineer.

SureFlow® Rating Program

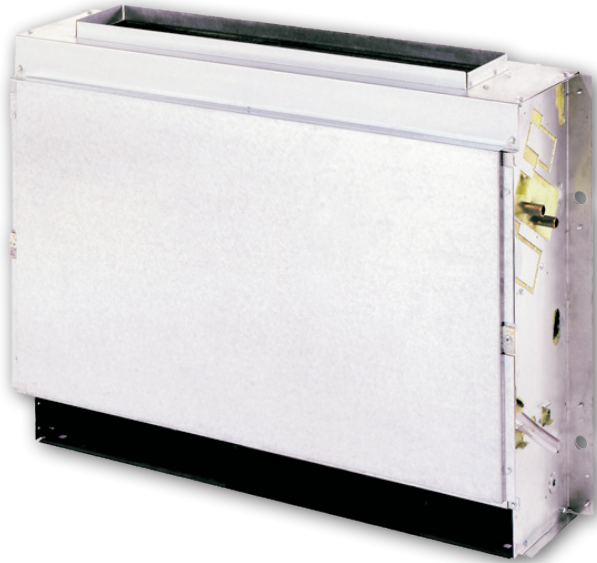
- Individual selection at specific criteria
- Intelligent format allows standard models and coils to be selected. Consult factory for special applications.
- Provides performance rating data
- Includes schedule builder
- Provides submittal drawings
- Provides sample specifications

SureFlow® Loop Simulator

- Models individual unit performance at selected design conditions
- Allows units to be modeled at multiple fan speeds or cycled off
- "AUTO SELECT" function automatically selects unit sizes and coil rows
- Displays total capacity, sensible capacity, and latent capacity for each unit
- Charts entering, leaving, and mixed water temperatures
- Loop performance is displayed graphically
- Allows fast, interactive system design

Vertical Series Portfolio

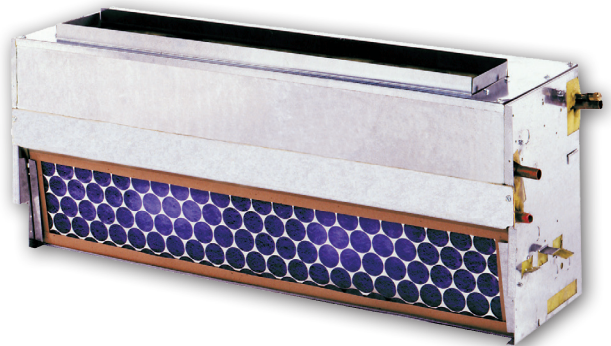
**FHF – SureFlow® Vertical Hideaway,
200 CFM to 1200 CFM**



**FSF – SureFlow® Vertical Slope-Top
Cabinet, 200 CFM to 1200 CFM**



**LHF – SureFlow® Vertical Lowboy
Hideaway, 200 CFM to 600 CFM**



**FXF – SureFlow® Vertical Cabinet,
200 CFM to 1200 CFM**

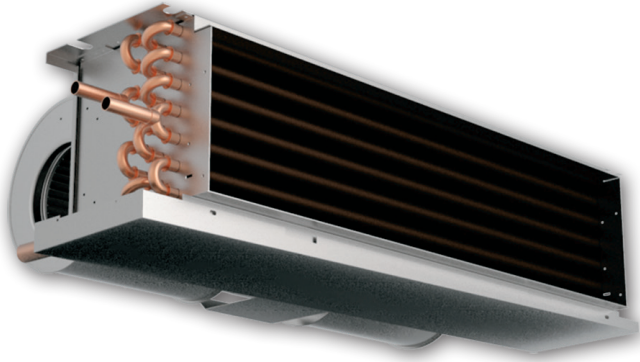


**LXF – SureFlow® Vertical Lowboy Cabinet,
200 CFM to 600 CFM**



Horizontal Series Portfolio

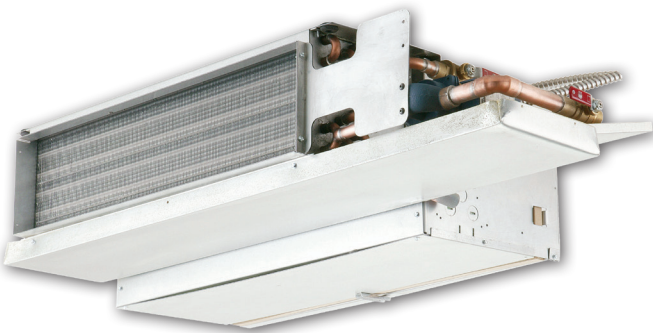
**CHF – SureFlow® Horizontal Hideaway,
200 CFM to 1200 CFM**



**CBF – SureFlow® Horizontal Telescoping
Hideaway, 200 CFM to 1200 CFM**



**CPF – SureFlow® Horizontal Hideaway
with Plenum, 200 CFM to 1200 CFM**

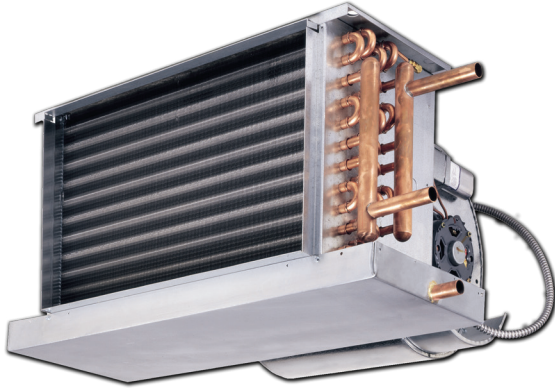


**CXF – SureFlow® Horizontal Cabinet,
200 CFM to 1200 CFM**



Hi-Performance Series Portfolio

**HHF – SureFlow® Hi-Performance
Hideaway, 600 CFM to 2000 CFM**



**HXF – SureFlow® Hi-Performance
Horizontal Cased, 600 CFM to 2000 CFM**



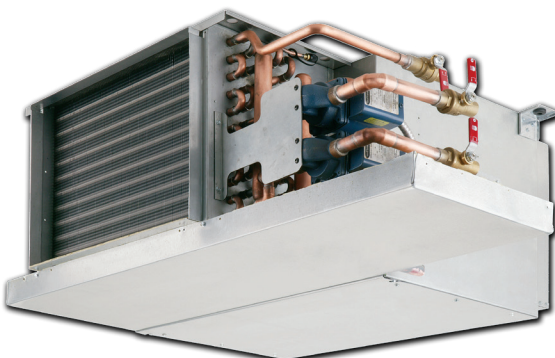
**HLF – SureFlow® Hi-Performance Cabinet,
600 CFM to 2000 CFM**



**VEF – SureFlow® Hi-Performance Vertical
Cased, 600 CFM to 2000 CFM**



**HPF – SureFlow® Hi-Performance
Hideaway w/Plenum, 600 CFM to 2000 CFM**



Modular Hi-Rise Series Portfolio

MPF – SureFlow® Modular Concealed,
300 CFM to 1200 CFM



MXF – SureFlow® Modular Cabinet,
300 CFM to 1200 CFM



Applications

Applications

SureFlow® systems can be used in either renovation or new construction projects

- Transporting BTUs in pipe is easier to conceal, less costly and more efficient than by air duct.
- Superior comfort of a 4-pipe system is achieved by using a 2-pipe distribution system.
- Minimize or eliminate core drilling.
- Zones are easy to change.
- Configuration is dictated by design. (In many cases, SureFlow® reduces the piping and installation costs significantly compared to the conventional parallel piping system.)
- Floors may have varying layouts.

Primary/Secondary Piping System Considerations

When designing SureFlow® piping systems, several things need to be considered:

- A. Location of Equipment Room. Strategically locating the equipment room may result in pipe size reductions and savings.

- B. Design Requirements. Requirements for auxiliary and common space equipment such as make-up air units should be considered. In those situations it might be advisable to connect such equipment through a conventional two-pipe distribution system following industry accepted design practice (see Figure 6).

Figure 6. SureFlow® System with Decoupled Common Areas

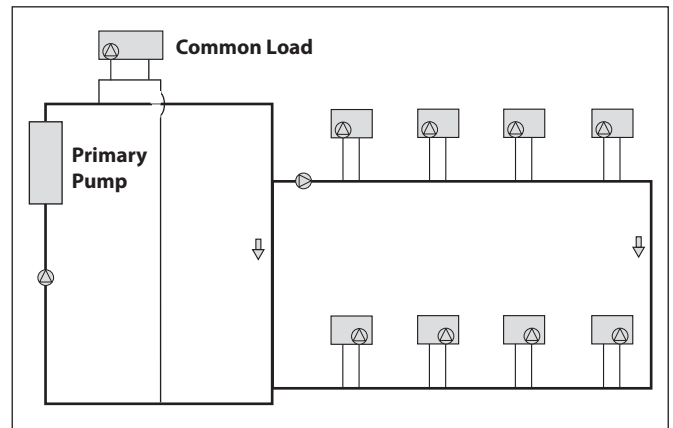
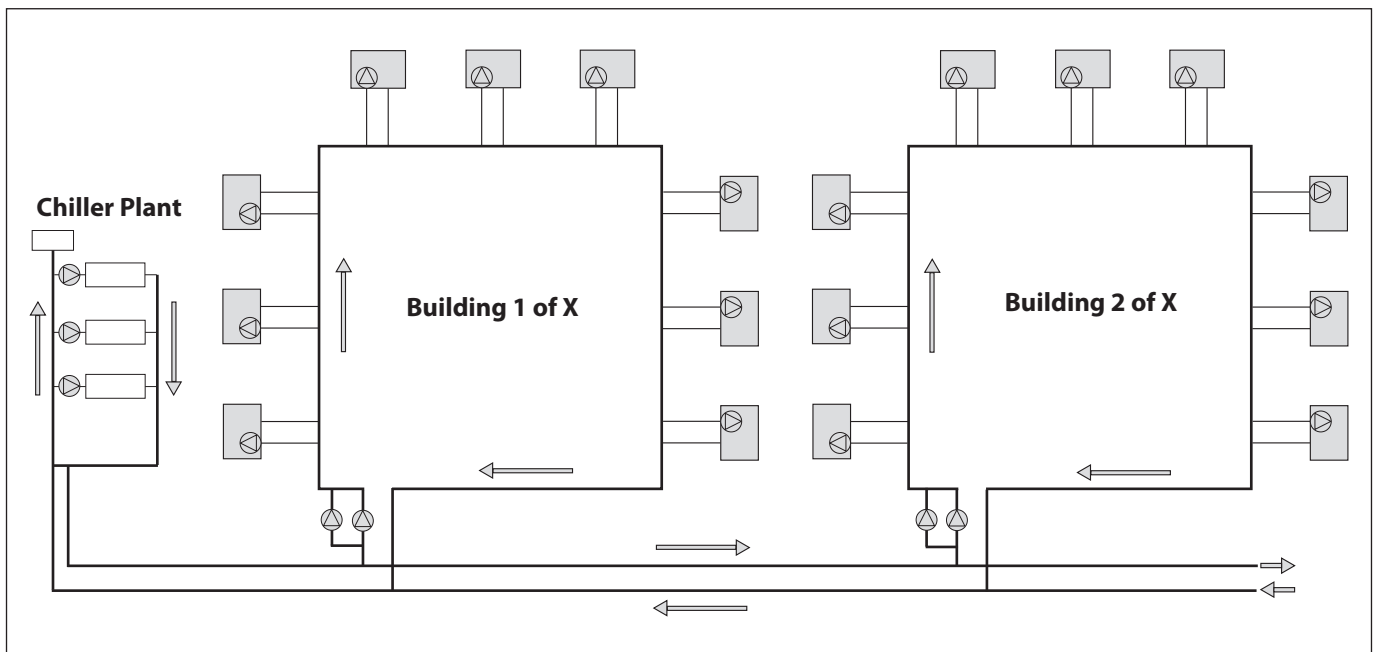


Figure 5. SureFlow® System in Multiple-building Applications



Applications, Cont'd.

C. Piping Loops. Piping loops may be run vertically or horizontally through a building, limited only by practical considerations. Hybrid combinations often present opportunities to achieve the best system design (see Figure 7).

Symmetrical piping layouts achieve the most natural flow balance while optimizing the effect of natural diversity on the loads (see Figure 8).

Try to loop piping around at least two sides of the building to take advantage of solar load variation. An alternate method is to run a supply loop down a hallway with take-off piping feeding room fan coils on both the left and right sides of the hallway. For maximum diversity potential, the supply and return mains may be separated by top and bottom floors to create mini-loops (see Figure 9).

Figure 7. Alternate-distribution and Loop-piping Layouts

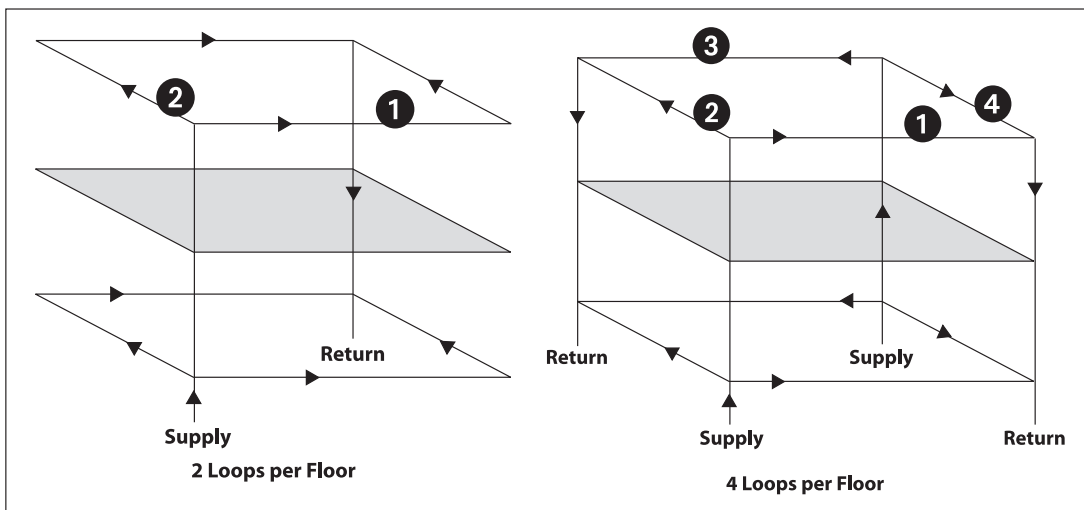
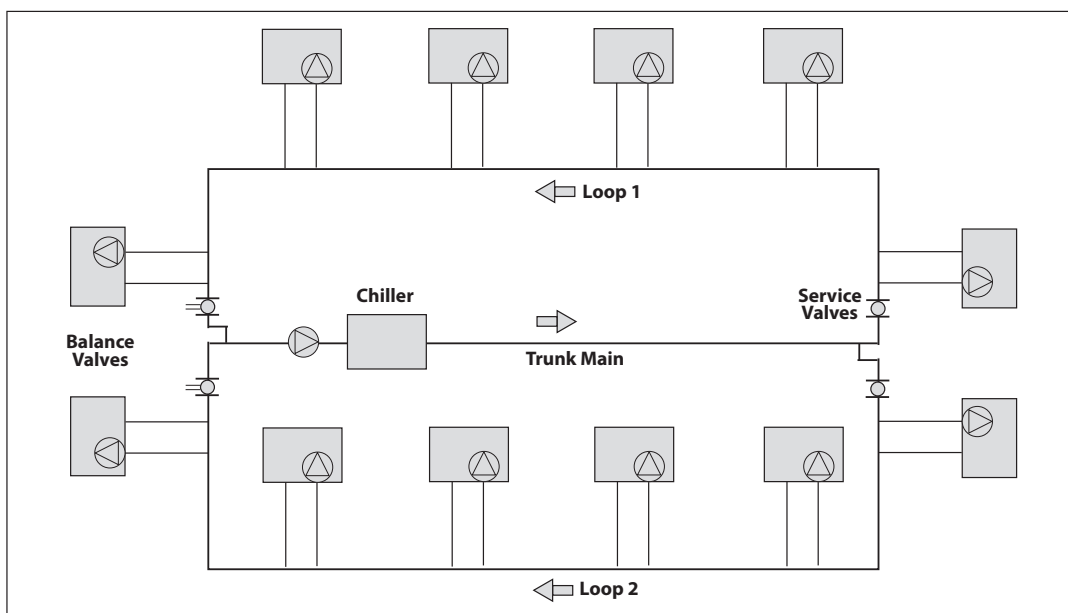
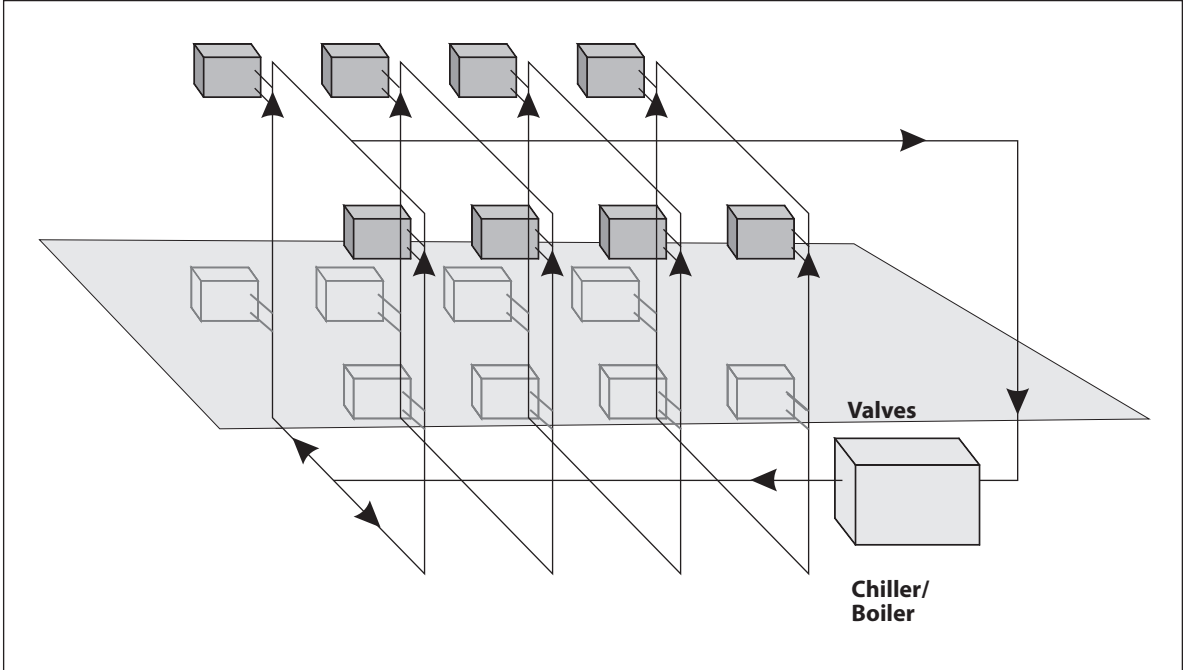


Figure 8. Symmetrical and Diversity-sensitive SureFlow® Installation



Applications, Cont'd.

Figure 9. Hybrid Loop Design



It is often desirable to divide a heavily-loaded loop into two or more loops with smaller pipe sizes. Depending on building layout, it may be practical to use one loop per floor and exposure. With other designs, it may be better to split loops and use a common riser to distribute the load.

Distribution risers can supply the parallel loops by direct- or reverse-return arrangements (see Figures 8 and 10). Standard balancing valves, service isolation valves and air vents should be installed as necessary for service and to balance flow to each loop.

Figure 10. Vertical Risers with Horizontal Distribution

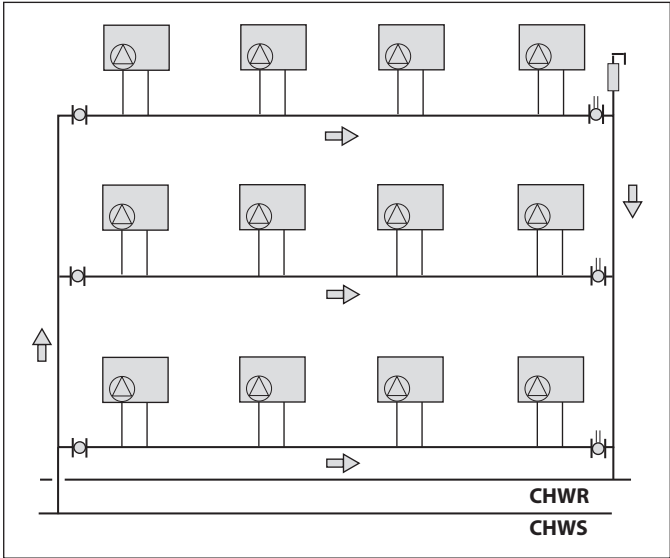
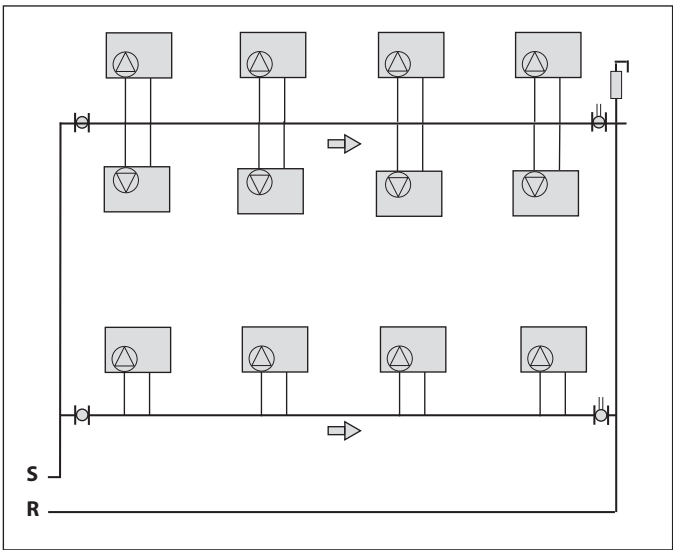


Figure 11. Alternate Layout



Features and Benefits

Application Fit

- SureFlow® units are offered in many configurations making them adaptable to any space requirements.
- Because of the simplified design, SureFlow® makes it possible to apply hydronic systems in applications where a conventional scheme is too costly, or where a hydronic solution has not been applied in the past.
- The BTU flow design allows the loop to be sized for a capacity range. The result is a SureFlow® Loop rated at a total capacity and a constant pipe size, that is adaptable to future requirements.
- Decoupling the fan coil from the system permanently reduces central pump horsepower.

Design Flexibility

- The IEC Rating Program and SureFlow® Loop Simulator are available to assist the designer.
- SureFlow® designs can be combined with parallel systems where the advantages of each approach can be utilized.
- Simplified pipe designs save time and money by eliminating terminal unit balancing, reducing fittings, transitions, and accessories, reducing design time, reducing errors, and make the design easier to communicate.

Ease of Installation

- Self-balancing design eliminates the need to balance the fan coils on startup, reducing installation time and costs.
- Heating and cooling loops of a constant pipe size reduce field coordination compared to a stepped parallel system.

Reducing the number of pipes (2-to-1 and 4-to-2):

- Speeds the installation of the system and reduces the installed costs.
- Reduces core drilling on renovation projects.
- “As built” drawings and shop-to-field drawings are easier to create, monitor and record.
- Simplified takeoff saves time and improves accuracy,
- Reduction of purchasing and bill of material management, saving overhead costs, and SureFlow® is a system that can be installed as designed.

Reliability

- The circulator delivers the correct water flow to the SureFlow® fan coil ensuring performance and comfort are maintained.
- The self-balancing design results in more predictable operation.
- Standard SureFlow® units are UL and MEA listed.

Efficiency

- Eliminating balancing devices and associated specialties and their added pressure drop reduces the required pump horsepower and results in a more efficient and lower cost system.

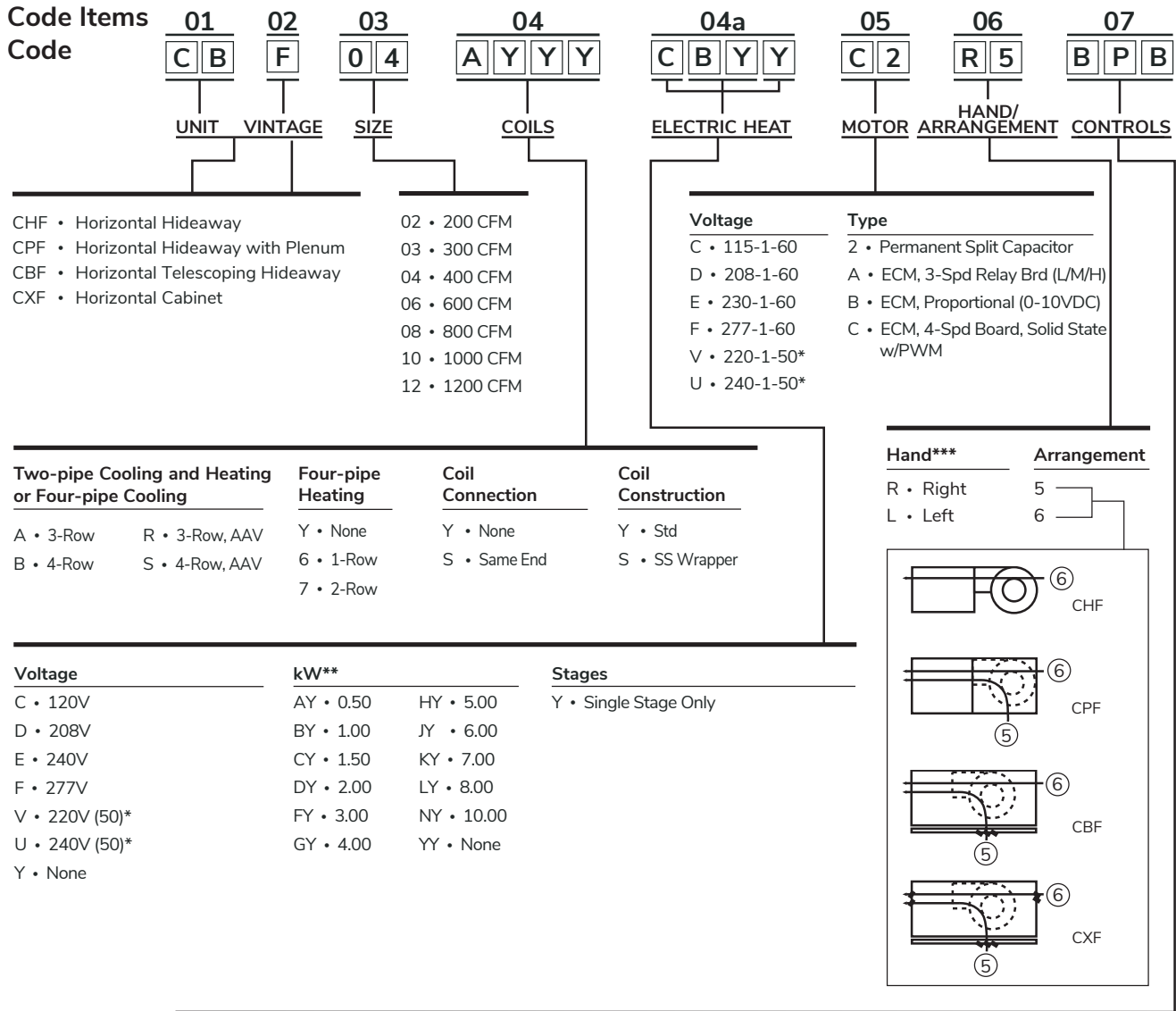
Unit Model Key for Vertical Series

Code Items	01 F X	02 	03 0 4	04 A Y Y Y	04a C B Y Y	05 C 2	06 R 5	07 B P A		
Code	UNIT VINTAGE		SIZE	COILS		ELECTRIC HEAT		MOTOR	HAND/ARRANGEMENT	CONTROLS
FHF • Vertical Hideaway FXF • Vertical Cabinet FSF • Vertical Sloped Top Cabinet LHF • Vertical LowBoy Hideaway (Tall) LXF • Vertical Lowboy Cabinet (Tall)			02 • 200 CFM 03 • 300 CFM 04 • 400 CFM 06 • 600 CFM 08 • 800 CFM 10 • 1000 CFM 12 • 1200 CFM		Voltage C • 115-1-60 D • 208-1-60 E • 230-1-60 F • 277-1-60 U • 240-1-50* V • 220-1-50*		Type 1 • Shaded Pole (STY/STW only) 2 • Permanent Split Capacitor A • ECM, 3-Spd Relay Brd (L/M/H) B • ECM, Proportional (0-10VDC) C • ECM, 4-Spd Board, Solid State w/PVWM		Hand** R • Right L • Left	Arrangement 5 7
Two-pipe Cooling and Heating or Four-pipe Cooling A • 3-Row R • 3-Row, AAV B • 4-Row S • 4-Row, AAV D • 2-Row T • 2-Row, AAV			Four-pipe Heating Y • None 6 • 1-Row 7 • 2-Row	Coil Connection Y • None S • Same End O • Opposite End	Coil Construction Y • Std S • SS Wrapper					
Voltage** C • 120V D • 208V E • 240V F • 277V V • 220V (50)* U • 240V (50)* Y • None			kW* BY • 1.00 CY • 1.50 DY • 2.00 FY • 3.00 GY • 4.00 HY • 5.00 JY • 6.00 YY • None		Stages Y • Single Stage Only					

Voltage**	System	Thermostat
B • 24 V	Manual Fan Operation	A • Basic Electronic Wall Series, 155, Vertical
C • 120V	A1 • Standard Unit Mount (Switch Only)	B • Basic Electronic Wall Series, 155, Horizontal
D • 208V	A2 • Standard Wall Mount (Switch Only)	C • Basic Series, 156, Unit Mounted
E • 240V	Function Control	P • Basic 24V Digital, 7-Day Programmable
F • 277V	G • 2 Pipe Heat Only	N • Basic 24V Digital, Non-Programmable
V • 220V (50)*	H • 2 Pipe Cool Only	F • Premium 24V Digital, 7-Day Programmable/ BACnet with Proportional Fan/ Valves Option
U • 240V (50)*	N • 2 Pipe Cool w/Total Elec. Heat, Manual C/O	G • Premium 24V Digital BACnet with Proportional Fan/ Valves Option
	P • 2 Pipe Cool w/Total Elec. Heat, Auto C/O	W • Venture 24V Wi-Fi Programmable
	Q • 4 Pipe Heat and Cool, Manual C/O	
	R • 4 Pipe Heat and Cool, Auto C/O	

* Consult factory for 50 Hz applications.
 ** Note that kW's depend on voltage and unit size.
 *** Standing in front of the unit, hand is determined by looking into the air supply and assigning the hand to match the location of the cooling coil connections.

Unit Model Key for Horizontal Series



Voltage**

- B • 24 V
- C • 120V
- D • 208V
- E • 240V
- F • 277V
- V • 220V (50)*
- U • 240V (50)*

System

Manual Fan Operation

- A • Standard Unit Mount (Switch Only)

Function Control

- G • 2 Pipe Heat Only
- H • 2 Pipe Cool Only
- N • 2 Pipe Cool w/Total Elec. Heat, Manual C/O
- P • 2 Pipe Cool w/Total Elec. Heat, Auto C/O
- Q • 4 Pipe Heat and Cool, Manual C/O
- R • 4 Pipe Heat and Cool, Auto C/O

Thermostat

- A • Basic Electronic Wall Series, 155, Vertical
- B • Basic Electronic Wall Series, 155, Horizontal
- P • Basic 24V Digital, 7-Day Programmable
- N • Basic 24V Digital, Non-Programmable
- F • Premium 24V Digital, 7-Day Programmable/ BACnet with Proportional Fan/ Valves Option
- G • Premium 24V Digital BACnet with Proportional Fan/ Valves Option
- W • Venture 24V Wi-Fi Programmable

* Consult factory for 50 Hz applications.

** Note that kW's depend on voltage and unit size.

*** Standing in front of the unit, hand is determined by looking into the air supply and assigning the hand to match the location of the cooling coil connections.

Unit Model Key for Hi-Performance Series

Code Items	01	02	03	04	04a	05	06	07
Code	H H	F	0 8	B Y Y S	C F Y Y	C 2	R 6	B P B
	UNIT	VINTAGE	SIZE	COILS	ELECTRIC HEAT	MOTOR	HAND/ARRANGEMENT	CONTROLS

HHF • Hi-Performance Hideaway	06 • 600 CFM
HPF • Hi-Performance Hideaway with Plenum	08 • 800 CFM
HLF • Hi-Performance Cabinet	10 • 1000 CFM
HXF • Hi-Performance Horizontal Cased	12 • 1200 CFM
VEF • Hi-Performance Vertical Cased	14 • 1400 CFM
	16 • 1600 CFM
	18 • 1800 CFM
	20 • 2000 CFM

Two-pipe Cooling and Heating or Four-pipe Cooling	Four-pipe Heating	Coil Connection	Coil Construction
A • 3 Row	Y • None	Y • None	Y • Std
B • 4 Row	6 • 1 Row	S • Same End	S • SS Wrapper
K • 6-Row (VEF - 6 Rows Maximum)	7 • 2 Row		
R • 3 Row, AAV			
S • 4 Row, AAV			
W • 6 Row, AAV			

Voltage**	kW	Stages
C • 120 Volt	DY • 2.00	Y • Single Stage Only
D • 208 Volt	FY • 3.00	NY • 10.00
E • 240 Volt	GY • 4.00	PY • 12.00
F • 277 Volt	HY • 5.00	QY • 14.00
V • 220 Volt (50)*	JY • 6.00	YY • None
U • 240 Volt (50)*	KY • 7.00	
Y • None	LY • 8.00	

Hand***	Arrangement
R • Right	5
L • Left	6

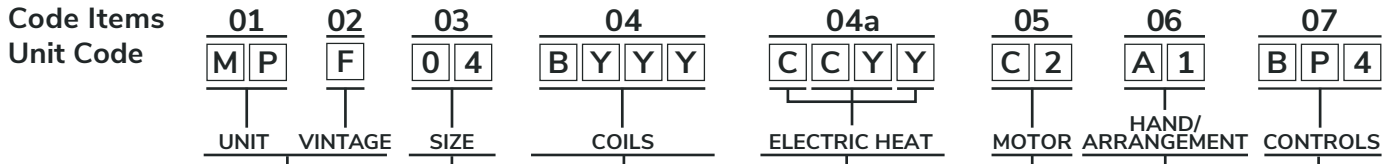
Voltage	System / Thermostat
B • 24 Volt	Manual Fan Operation
C • 120 Volt	A2 • Standard Wall Mount (Switch Only)
D • 208 Volt	Valve Cycle Control
E • 240 Volt	G • 2-Pipe Heat Only
F • 277 Volt	H • 2-Pipe Cool Only
V • 220 Volt (50)*	N • 2-Pipe Cool w/ Total Elec. Heat, Manual C/O
U • 240 Volt (50)*	P • 2-Pipe Cool w/ Total Elec. Heat, Auto C/O
	Q • 4-Pipe Heat and Cool, Manual C/O
	R • 4-Pipe Heat and Cool, Auto C/O
	Thermostat
	A • Basic Electronic Wall Series, 155, Vertical
	B • Basic Electronic Wall Series, 155, Horizontal
	P • Basic 24V Digital, 7-Day Programmable
	N • Basic 24V Digital, Non-Programmable
	F • Premium 24V Digital, 7-Day Programmable/BACnet with Proportional Fan/Valves Option
	G • Premium 24V Digital BACnet with Proportional Fan/Valves Option
	W • Venture 24V Wi-Fi Programmable

* Consult factory for 50 Hz applications.

** Note that kW's depend on voltage and unit size

*** Standing in front of the unit, hand is determined by looking into the air supply and assigning the hand to match the location of the cooling coil connections.

Unit Model Key for Modular Hi-Rise Series



- MPF • Modular Concealed
 - MAF • Modular Concealed (Ditto-A)
 - MBF • Modular Concealed (Ditto-B)
 - MMF • Modular Concealed (Primary)
 - MSF • Modular Concealed (Secondary)
 - MXF • Modular Cabinet
- 03 • 300 CFM
 - 04 • 400 CFM
 - 06 • 600 CFM
 - 08 • 800 CFM
 - 10 • 1000 CFM
 - 12 • 1200 CFM

- Voltage**
- C • 115-1-60
 - D • 208-1-60
 - E • 230-1-60
 - F • 277-1-60

- Type**
- 2 • Permanent Split Capacitor (PSC)
 - A • ECO4, 3-Spd w/Adjust Board
 - B • ECO4, Proportional Fan (0-10VDC/4-20mA)
 - C • ECO4, 4-Spd EVO Brd (SSRs) Board w/Ramping

Two-pipe Cooling and Heating or Four-pipe Cooling

- A • 3 Row
- B • 4 Row
- R • 3 Row, AAV
- S • 4 Row, AAV

Four-pipe Heating

- Y • None
- 6 • 1 Row Water Heating
- 7 • 2 Row Water Heating

Coil Connection

- Y • None
- S • Same End

Coil Construction

- Y • Std
- S • SS Wrapper

SINGLE SUPPLY**

ARR Code	Return	Supply
A1	Front	Front
B1	Front	Right
C1	Front	Left
D1	Front	Top

DOUBLE SUPPLY**

ARR Code	Return	Supply
A2	Front	Front/Right
B2	Front	Front/Left
C2	Front	Front/Top
D2	Front	Right/Left
E2	Front	Right/Top
F2	Front	Left/Top

- Voltage**
- C • 115-1-60
 - D • 208-1-60
 - E • 230-1-60
 - F • 277-1-60

- kW***
- BY • 1.00
 - CY • 1.50
 - DY • 2.00
 - FY • 3.00
 - GY • 4.00
 - HY • 5.00
 - JY • 6.00
 - LY • 8.00
 - NY • 10.00
 - YY • No Electric Heat

- Coil Construction**
- Y • Std
 - S • SS Wrapper

- Voltage**
- B • 24V
 - C • 120V
 - D • 208V
 - E • 240V
 - F • 277V

System/Thermostat

Manual Fan Operation

- A1 • Standard Unit Mount (Switch Only)
- A2 • Wall Mount

Function Control

- G • 2-Pipe Heat Only
- H • 2-Pipe Cool Only
- N • 2-Pipe Cool w/Total Elec. Heat, Manual C/O
- P • 2-Pipe Cool w/Total Elec. Heat, Auto C/O
- Q • 4-Pipe Heat and Cool, Manual C/O
- R • 4-Pipe Heat and Cool, Auto C/O

Thermostat

- A • Basic Electronic Wall Series, 155, Vertical
- B • Basic Electronic Wall Series, 155, Horizontal
- C • Basic Series, 156, Unit Mounted
- P • Basic 24V Digital, 7-Day Programmable
- N • Basic 24V Digital, Non-Programmable
- F • Premium 24V Digital, 7-Day Programmable/BACnet with Proportional Fan/ Valves Option
- G • Premium 24V Digital BACnet with Proportional Fan/ Valves Option
- W • Venture 24V Wi-Fi Programmable

* Note that kW's depend on voltage and unit size.
 ** For additional codes check the price sheet.
 *** Consult factory for pricing.

Ratings and Listings



Intertek
3061627

HEATING AND COOLING EQUIPMENT

C-UL US Listing

IEC's SureFlow® Series units are listed by Underwriters' Laboratories. The C-UL US listing signifies that IEC's fan coil units have been examined by UL and are in compliance with both the U.S. and Canadian organizations' applicable standards.

Vertical Series Standard Ratings

IEC's Vertical Series coils are tested in accordance with ARI 410.

Unit Type	Rows	Unit Size	CFM	Cooling Capacity	
				Total MBH	Sensible MBH
FHF FXF FSF	3-Rows	02	240	7.8	5.5
		03	295	9.4	6.7
		04	410	12.1	9.0
		06	620	16.3	12.7
		08	700	18.5	14.5
		10	915	23.5	18.7
		12	1100	26.7	21.9
	4-Rows	02	215	8.5	5.8
		03	285	10.7	7.5
		04	395	13.7	9.9
		06	605	19.1	14.3
		08	690	21.8	16.4
		10	885	27.0	20.7
		12	1070	30.6	24.2
LHF LXF	3-Rows	02	230	8.9	6.0
		03	345	12.2	8.5
		04	460	15.3	11.0
		06	670	19.9	15.1

- NOTES: 1. Ratings are based on 80°F DB and 67°F WB EAT, 45°F EWT, high fan speed, motor voltage 115/1/60, and airflow under dry coil conditions.
2. For all application ratings, use IEC's Rating Program or contact your local IEC representative.

Horizontal Series Standard Ratings

IEC's Horizontal Series coils are tested in accordance with ARI 410.

Unit Type	Rows	Unit Size	CFM	Cooling Capacity	
				Total MBH	Sensible MBH
CPF CXF CBF	3-Rows	02	190	6.8	4.6
		03	300	9.5	6.8
		04	470	12.9	9.8
		06	690	16.9	13.6
		08	835	20.0	16.3
		10	1045	24.9	20.5
		12	1300	28.6	24.5
	4-Rows	02	185	7.7	5.2
		03	290	10.8	7.5
		04	400	14.8	11.0
		06	675	20.1	15.5
		08	815	23.6	18.4
		10	1020	28.8	22.9
		12	1275	33.0	27.3

- NOTES: 1. Ratings are based on 80°F DB and 67°F WB EAT, 45°F EWT, high fan speed, motor voltage 115/1/60, and airflow under dry coil conditions.
2. For all application ratings, use IEC's Rating Program or contact your local IEC representative.
3. For CHF, use IEC's Rating Program.

Ratings and Listings, Cont'd.

Hi-Performance Series Standard Ratings

IEC's Hi-Performance Series coils are tested in accordance with ARI 410-2001.

Unit Type	Rows	Unit Size	CFM	Cooling Capacity	
				Total MBH	Sensible MBH
HHF	3-Rows	06	680	15.4	12.7
		08	940	19.4	16.7
		10	1240	24.0	21.0
		12	1270	26.3	22.8
		14	1590	34.3	28.8
		16	1800	37.9	32.4
		18	2484	43.8	39.7
		20	2607	46.1	42.1
	4-Rows	06	660	18.3	14.4
		08	920	23.6	19.3
		10	1210	28.1	23.9
		12	1240	33.6	26.9
		14	1550	39.2	32.3
		16	1750	43.4	36.2
		18	2284	49.7	43.7
		20	2407	52.4	46.3
	6-Rows	06	620	22.1	16.2
		08	870	28.3	21.6
		10	1140	33.3	26.7
		12	1180	40.7	30.3
14		1450	46.9	36.0	
16		1660	51.7	40.4	
18		1885	56.4	45.0	
20		2008	59.1	47.6	

- NOTES: 1. Ratings are based on 80°F DB and 67°F WB EAT, 45°F EWT, high fan speed, motor voltage 115/1/60, and airflow under dry coil conditions. Hi-Performance units are rated at 0.2 in. W.C. external static pressure.
 2. For HPF, HXF, HLF, and VEF units, use IEC's Rating Program.
 3. For all application ratings, use IEC's Rating Program or contact your local IEC representative.

Modular Hi-Rise Series Standard Ratings

IEC's Modular Hi-Rise Series coils are tested in accordance with ARI 410-2001.

Unit Type	Rows	Unit Size	CFM	Cooling Capacity	
				Total MBH	Sensible MBH
MPF MXF	3-Rows	03	440	13.8	10.2
		04	510	14.4	10.9
		06	710	18.8	14.9
		08	840	19.6	16.0
		10	1080	26.3	21.4
		12	1260	27.2	22.7
	4-Rows	03	420	16.4	11.4
		04	490	17.4	12.4
		06	700	23.7	17.4
		08	840	25.1	19.1
		10	1070	31.0	24.3
		12	1250	32.2	26.1

- NOTES: 1. Ratings are based on 80°F DB and 67°F WB EAT, 45°F EWT, high fan speed, motor voltage 115/1/60, and airflow under dry coil conditions.
 2. For all application ratings, use IEC's Rating Program or contact your local IEC representative.

Hydronic Heating Capacity

Vertical Series Heating

Unit Type	Rows	Unit Size	CFM	GPM	Capacity MBH
FHF FXF FSF	1-Row	02	215	3.2	9.1
		03	285	3.1	11.8
		04	395	2.9	15.9
		06	605	2.6	22.9
		08	690	2.6	26.2
		10	885	2.3	32.7
		12	1070	2.2	37.7
	2-Row	02	190	4.5	13.2
		030	260	4.4	17.8
		04	380	4.2	25.3
		06	590	4.0	37.1
		08	680	3.8	42.8
		10	860	3.6	53.1
		12	1040	3.4	61.7
	3-Row	02	240	3.9	16.5
		03	295	3.8	20.1
		04	410	3.6	27.0
		06	620	5.0	39.2
		08	700	4.9	44.6
		10	915	4.8	57.2
		12	1100	4.7	66.5
	4-Row	02	215	3.6	13.1
		03	285	3.5	17.1
		04	395	3.3	23.0
06		605	4.8	34.1	
08		590	4.7	39.0	
10		885	4.5	49.1	
12		1070	4.5	57.4	
LHF LXF	1-Row	02	230	2.9	10.8
		03	345	2.7	16.0
		04	460	2.5	20.8
		06	370	2.2	28.9
	3-Row	02	230	3.6	17.1
		03	345	3.4	25.2
		04	460	3.2	32.7
		06	670	2.9	45.2

- NOTES:** 1. All base hot water capacities are given in thousands of BTUH (MBH).
 2. Ratings are based on 70°F EAT and 180°F EWT for 1 and 2 row coils, 160°F EWT for 3 row coils and 140°F EWT for 4 row coils.
 3. Data is taken from the IEC's Rating Program.

Horizontal Series Heating

Unit Type	Rows	Unit Size	CFM	GPM	Capacity MBH
CPF CXF CBF	1-Row	02	185	3.2	7.9
		03	290	3.1	12.0
		04	460	2.9	17.6
		06	675	2.8	24.3
		08	815	2.6	28.8
		10	1020	2.3	35.6
		12	1275	2.2	41.4
	2-Row	02	170	4.5	11.8
		030	280	4.4	19.0
		04	445	4.2	28.3
		06	660	4.0	39.9
		08	800	3.8	47.5
		10	1000	3.6	58.7
		12	1250	3.4	68.9
	3-Row	02	190	3.9	13.4
		03	300	3.8	20.4
		04	470	3.6	29.8
		06	690	5.0	42.0
		08	835	4.9	50.1
		10	1045	4.8	62.5
		12	1300	4.7	73.7
	4-Row	02	185	3.6	11.4
		03	290	3.5	17.4
		04	460	3.3	25.8
06		675	4.8	26.9	
08		815	4.7	43.9	
10		1020	4.5	54.3	
12		1275	4.5	64.2	

- NOTES:** 1. All base hot water capacities are given in thousands of BTUH (MBH).
 2. Ratings are based on 70°F EAT and 180°F EWT for 1 and 2 row coils, 160°F EWT for 3 row coils and 140°F EWT for 4 row coils.
 3. For CHF and CBF units, use IEC's Rating Program.
 4. Data is taken from the IEC's Rating Program.

Hydronic Heating Capacity, Cont'd.

Hi-Performance Series Heating

Unit Type	Rows	Unit Size	CFM	GPM	Capacity MBH
HHF	1-Row	06	640	2.6	21.7
		08	895	2.4	28.4
		10	1180	2.3	34.0
		12	1210	2.1	37.5
		14	1510	2.0	43.0
		16	1715	1.9	47.1
		18	2085	1.9	51.7
		20	2208	1.8	53.9
	2-Row	06	620	3.9	36.0
		08	870	3.8	47.6
		10	1140	3.6	57.5
		12	1180	3.5	63.0
		14	1450	3.4	72.6
		16	1660	3.3	80.1
		18	1885	3.2	87.0
		20	2008	3.1	91.1
	3-Row	06	680	3.3	38.1
		08	940	3.1	49.1
		10	1240	4.1	61.9
		12	1270	1.0	67.3
14		1590	6.3	85.9	
16		1800	6.2	95.7	
18		2484	6.1	113.0	
20		2607	6.0	119.3	

- NOTES:** 1. All base hot water capacities are given in thousands of BTUH (MBH).
 2. Ratings are based on 70°F EAT and 180°F EWT for 1 and 2 row coils, 160°F EWT for 3 row coils.
 3. Data is taken from the IEC's Rating Program.
 4. For all other models, use IEC's Rating Program.

Modular Hi-Rise Series Heating

Unit Type	Rows	Unit Size	CFM	GPM	Capacity MBH
MPF MXF	1-Row	03	420	2.0	19.4
		04	490	2.0	20.1
		06	700	1.8	28.0
		08	840	1.8	28.7
		10	1070	1.6	36.2
		12	1250	1.6	36.6
	2-Row	03	410	3.4	30.8
		04	480	3.4	32.8
		06	690	3.1	46.1
		08	840	3.1	48.7
		10	1060	2.8	61.5
	3-Row	12	1240	2.8	63.3
		03	440	2.9	31.2
		04	510	2.9	33.4
		06	710	2.7	45.5
		08	840	2.7	48.1
	4-Row	10	1080	3.7	64.8
		12	1260	3.7	67.8
		03	420	4.7	26.9
		04	490	4.7	29.5
		06	700	4.5	41.7
		08	840	4.5	45.6
		10	1070	4.2	57.8
		12	1250	4.2	61.3

- NOTES:** 1. All base hot water capacities are given in thousands of BTUH (MBH).
 2. Ratings are based on 70°F EAT and 180°F EWT for 1 and 2 row coils, 160°F EWT for 3 row coils and 140°F EWT for 4 row coils.
 3. Data is taken from the IEC's Rating Program.

Electric Resistance Heating

Electric heaters are available on SureFlow® fan coil units for the following applications.

Total Electric Heat

Total electric heat eliminates the requirement for a boiler. Heating and/or cooling may be available on an individual basis throughout the year. Two-pipe chilled water is used for cooling, and the electric heater is used for heating. Individual room controls can be supplied for either manual or automatic changeover.

Auxiliary Electric Heat

Auxiliary electric heat is ideal for tempering room air between seasons and during the cooling season when chilled water is being circulated. Individual room controls are supplied to provide electric heat only when chilled water is being circulated. During regular heating season, heating is provided by hot water being circulated in the system.

Vertical Series Electric Heater Construction

The heating element of high-grade resistance wire is centered in a steel tube and has helically wound 1¼-inch diameter fins. The terminal ends have an unheated section to isolate the terminals from the heat source. The heater is finished with a baked-on heat- and moisture-resistant coating.

The sheath heater element is mounted directly above the coil. High limit thermal cutouts protect the heater in the event of air failure. There are many special applications and control sequences for electric heat. For special applications, please consult the factory.

Horizontal, Hi-Performance and Modular Hi-Rise Series Electric Heater Construction

The heater coils of high-grade resistance wire are supported by ceramic insulators on plated steel brackets. These heat elements are suspended directly in front of the fan outlet. High limit thermal cutouts protect the heater in the event of air failure. There are many special applications and control sequences for electric heat. For special applications, please consult the factory.

Vertical Series Electric Heater Selection

Voltage	kW	Unit Size						
		02	03	04	06	08	10	12
120 V	1.0	F/L	F/L	F/L	F/L	-	-	-
	1.5	-	F/L	F/L	F/L	-	-	-
	2.0	-	-	F/L	F/L	F	-	-
	3.0	-	-	-	F/L	F	F	F
208 V	1.0	F/L	F/L	F/L	F/L	-	-	-
	1.5	-	F/L	F/L	F/L	-	-	-
	2.0	-	-	F/L	F/L	F	-	-
	3.0	-	-	-	F/L	F	F	F
	4.0	-	-	-	-	F	F	F
240 V 277 V	5.0	-	-	-	-	-	-	F
	1.0	F/L	F/L	F/L	F/L	-	-	-
	1.5	-	F/L	F/L	F/L	-	-	-
	2.0	-	-	F/L	F/L	F	-	-
	3.0	-	-	-	F/L	F	-	-
	4.0	-	-	-	-	F	F	F
5.0	-	-	-	-	-	F	F	
6.0	-	-	-	-	-	-	-	F

- NOTES: 1. F = Floor; L = Lowboy.
 2. All heaters are single stage and single phase.
 3. Electric heaters are available with top air discharge only.
 4. Electric Heating Capacities (BTUH) = Heater kW x 3413.
 5. Electric Heater Amperage = (Heater kW x 1000)/Applied Voltage.
 6. Consult factory for 50 Hz applications.

Electric Resistance Heating, Cont'd.

Horizontal Series Electric Heater Selection

Voltage	kW	Unit Size						
		02	03	04	06	08	10	12
120 V	0.5	•	•	–	–	–	–	–
	1.0	•	•	•	–	–	–	–
	1.5	•	•	•	–	–	–	–
	2.0	•	•	•	•	•	•	•
	3.0	–	•	•	•	•	•	•
208 V	0.5	•	•	–	–	–	–	–
	1.0	•	•	•	–	–	–	–
	1.5	•	•	•	–	–	–	–
	2.0	•	•	•	•	•	•	•
	3.0	•	•	•	•	•	•	•
	4.0	–	–	–	•	•	•	•
	5.0	–	–	–	•	•	–	–
	6.0	–	–	–	–	•	–	–
	7.0	–	–	–	–	•	–	–
8.0	–	–	–	–	–	•	•	
240 V 277 V	0.5	•	•	–	–	–	–	–
	1.0	•	•	•	–	–	–	–
	1.5	•	•	•	–	–	–	–
	2.0	•	•	•	•	•	•	•
	3.0	–	•	•	•	•	•	•
	4.0	–	–	–	•	•	•	•
	5.0	–	–	–	•	•	–	–
	6.0	–	–	–	•	•	•	•
	7.0	–	–	–	–	•	–	–
8.0	–	–	–	–	–	•	•	
10.0	–	–	–	–	–	–	•	

- NOTES: 1. All heaters are single stage and single phase.
 2. Heaters over 48 Amps are subdivided and fused.
 3. Electric Heating Capacities (BTUH) = Heater kW x 3413.
 4. Electric Heater Amperage = (Heater kW x 1000)/Applied Voltage.
 5. Consult factory for 50 Hz applications.

Hi-Performance Series Electric Heater Selection

Voltage	kW	Unit Size							
		06	08	10	12	14	16	18	20
120 V	2.0	•	•	•	–	–	–	–	–
	3.0	•	•	•	–	–	–	–	–
208 V 240 V 277 V	2.0	•	•	•	–	–	–	–	–
	3.0	•	•	•	–	–	–	–	–
	4.0	•	•	•	•	•	•	•	•
	5.0	–	•	•	•	•	•	•	•
	6.0	–	•	•	•	•	•	•	•
	7.0	–	–	•	•	•	•	•	•
	8.0	–	–	–	•	•	•	•	•
	9.0	–	–	–	•	•	•	•	•
	10.0	–	–	–	–	•	•	•	•
	12.0	–	–	–	–	–	•	•	•
14.0	–	–	–	–	–	–	–	•	

Modular Hi-Rise Series Electric Heater Selection

Voltage	kW	Unit Size					
		03	04	06	08	10	12
120 V	1.0	•	•	•	•	•	•
	1.5	•	•	•	•	•	•
	2.0	•	•	•	•	•	•
	3.0	•	•	•	•	•	•
208 V	1.0	•	•	•	•	•	•
	1.5	•	•	•	•	•	•
	2.0	•	•	•	•	•	•
	3.0	•	•	•	•	•	•
	4.0	–	•	•	•	•	•
	5.0	–	–	•	•	•	•
	6.0	–	–	–	•	•	•
8.0	–	–	–	•	•	•	
240 V 277 V	1.0	•	•	•	•	•	•
	1.5	•	•	•	•	•	•
	2.0	•	•	•	•	•	•
	3.0	•	•	•	•	•	•
	4.0	–	•	•	•	•	•
	5.0	–	–	•	•	•	•
	6.0	–	–	–	•	•	•
	8.0	–	–	–	•	•	•
10.0	–	–	–	–	•	•	

- NOTES: 1. All heaters are single stage and single phase.
 2. Heaters over 48 Amps are subdivided and fused.
 3. Electric Heating Capacities (BTUH) = Heater kW x 3413.
 4. Electric Heater Amperage = (Heater kW x 1000)/Applied Voltage.
 5. Consult factory for 50 Hz applications.

Air Performance

Air Performance (60 Hz) for Vertical Series

Model	Coil	Unit Size	CFM @ 0.0 ESP for Fan Speed			High Speed CFM @ ESP Indicated			
			Low	Med	High	0.05	0.10	0.15	0.20
FHF FXF FSF	3-Row	02	185	210	240	195	150	105	–
		03	205	250	295	260	220	185	155
		04	225	295	410	370	335	310	290
		06	310	460	620	565	515	475	440
		08	360	575	700	640	600	545	500
		10	490	675	915	850	780	725	655
		12	580	935	1100	1025	970	920	865
	4-Row	02	165	190	215	170	135	95	–
		03	200	240	285	245	205	170	140
		04	220	280	395	355	325	300	260
		06	305	450	605	550	505	465	430
		08	350	570	690	630	590	540	490
		10	475	650	885	820	755	700	635
		12	565	910	1070	995	945	895	840
LHF LXF	2-Row	02	125	170	250	225	190	150	120
		03	195	285	370	345	305	275	235
		04	240	350	480	440	400	360	320
		06	395	575	750	700	660	660	560
	3-Row	02	115	155	230	210	180	145	115
		03	185	265	345	315	285	255	230
		04	230	335	460	420	385	345	310
		06	355	510	670	625	580	540	495

- NOTES: 1. Tabled values are standard CFM at sea level, 70°F with dry coil.
2. Ratings include factory installed filter and/or grille, where applicable.
3. Consult factory for 50 Hz applications.

Blower Performance for Horizontal Series

Air Performance (60 Hz) for Horizontal Series

Model	Coil	Unit Size	CFM @ 0.0 ESP for Fan Speed			High Speed CFM @ ESP Indicated					
			Low	Med	High	0.05	0.10	0.15	0.20	0.25	0.30
CHF	3-Row	02	175	195	220	205	185	160	-	-	-
		03	250	295	330	300	265	225	170	-	-
		04	220	360	510	480	450	415	370	290	-
		06	330	540	760	720	670	620	560	475	-
		08	335	590	870	840	800	760	700	620	-
		10	490	665	1100	1060	1010	930	845	730	-
	4-Row	02	165	190	215	200	175	140	-	-	-
		03	240	285	320	290	250	205	150	-	-
		04	215	305	500	470	440	400	340	240	-
		06	295	530	745	700	650	590	525	430	-
		08	330	585	860	825	780	730	665	575	-
		10	480	655	1085	1040	970	895	800	670	-
CBF CPF CXF	3-Row	02	150	175	190	180	170	145	-	-	-
		03	215	270	300	275	250	215	165	-	-
		04	205	275	470	445	415	380	320	250	-
		06	280	450	690	655	615	560	500	410	-
		08	335	565	835	800	760	710	650	570	-
		10	485	630	1045	995	940	880	805	710	-
	4-Row	02	145	170	185	180	160	125	-	-	-
		03	205	260	290	270	240	195	-	-	-
		04	200	270	460	435	400	355	300	210	-
		06	220	440	675	635	595	535	465	355	-
		08	325	550	815	780	740	658	615	515	-
		10	475	615	1020	970	915	850	765	645	-
		12	530	880	1275	1215	1150	1075	980	850	815

- NOTES: 1. Tabled values are standard CFM at sea level, 70°F with dry coil.
2. Ratings include factory installed filter and/or grille, where applicable.
3. Consult factory for 50 Hz applications.

Blower Performance for Hi-Performance Series

Air Performance (60 Hz) for Hi-Performance Series

Model	Coil	Unit Size	CFM @ 0.0 ESP For Fan Speed			High Speed CFM @ ESP Indicated						
			Low	Med	High	0.10	0.20	0.25	0.30	0.40	0.50	0.60
HHF	3-Row	06	545	645	800	740	680	650	620	560	470	330
		08	645	885	1080	1010	940	910	870	800	710	590
		10	825	1045	1280	1260	1240	1190	1130	1010	910	640
		12	945	1125	1450	1360	1270	1220	1180	1090	990	850
		14	890	1405	1875	1730	1590	1520	1450	1310	1170	920
		16	900	1420	2080	1940	1800	1730	1660	1510	1350	1110
		18	1160	1720	2630	2570	2485	2415	2340	2170	1945	-
		20	1225	1860	2780	2700	2605	2545	2470	2310	2120	-
	4-Row	06	530	630	780	720	660	630	600	540	430	260
		08	630	870	1060	990	920	890	850	770	680	540
		10	805	1020	1250	1230	1210	1160	1100	970	840	700
		12	925	1100	1420	1330	1240	1200	1150	1060	950	790
		14	860	1355	1810	1680	1550	1490	1420	1270	1110	890
		16	875	1385	2030	1890	1750	1680	1610	1460	1280	1000
		18	1145	1685	2445	2380	2285	2215	2145	1985	1770	-
		20	1210	1825	2595	2510	2405	2345	2275	2125	1950	-
	6-Row	06	505	595	740	680	620	590	560	470	330	-
		08	600	830	1010	940	870	840	800	710	590	-
		10	765	975	1190	1170	1140	1090	1030	890	720	-
		12	885	1055	1360	1270	1180	1130	1090	990	850	-
		14	820	1300	1730	1590	1450	1380	1310	1170	970	-
		16	845	1335	1960	1810	1660	1590	1510	1350	1110	-
		18	1115	1615	2075	1990	1885	1820	1755	1615	1425	-
		20	1180	1755	2225	2120	2010	1945	1885	1755	1600	-
HPF HXF	3-Row	06	535	630	780	710	640	600	570	500	410	280
		08	590	810	990	920	850	820	780	700	590	430
		10	755	955	1170	1140	1100	1040	990	910	810	700
		12	1040	1240	1600	1480	1360	1300	1240	1120	980	780
		14	1290	1770	1940	1795	1660	1595	1525	1390	1280	1085
		16	1105	1710	2380	2230	2100	2015	1945	1785	1640	-
		18	1105	1675	2515	2450	2355	2275	2185	2045	1850	-
		20	1170	1815	2690	2580	2475	2405	2315	2185	2025	-
	4-Row	06	520	610	760	690	620	580	550	470	380	230
		08	575	795	970	900	830	790	760	670	550	350
		10	735	930	1140	1110	1070	1010	960	860	760	660
		12	1035	1235	1590	1460	1330	1270	1200	1070	920	700
		14	1260	1710	1880	1740	1610	1550	1485	1350	1210	1015
		16	1075	1650	2320	2175	2050	1970	1905	1745	1570	-
		18	1090	1640	2355	2260	2155	2075	1990	1860	1657	-
		20	1155	1780	2505	2390	2275	2205	2120	2000	1855	-
	6-Row	06	485	570	710	640	570	540	500	410	280	-
		08	560	770	940	860	780	740	700	590	430	-
		10	690	875	1070	1030	990	930	880	760	620	-
		12	965	1145	1480	1360	1240	1180	1120	980	780	-
		14	1200	1590	1745	1625	1510	1455	1400	1265	1065	-
		16	1015	1530	2180	2060	1950	1875	1820	1660	1425	-
		18	1060	1570	1990	1870	1755	1680	1600	1490	1330	-
		20	1125	1710	2140	2000	1880	1810	1730	1630	1505	-

NOTES: 1. Tabled values are standard CFM at sea level, 70°F with dry coil.
 2. Ratings include factory installed filter and/or grille, where applicable.
 3. Consult factory for 50 Hz applications.

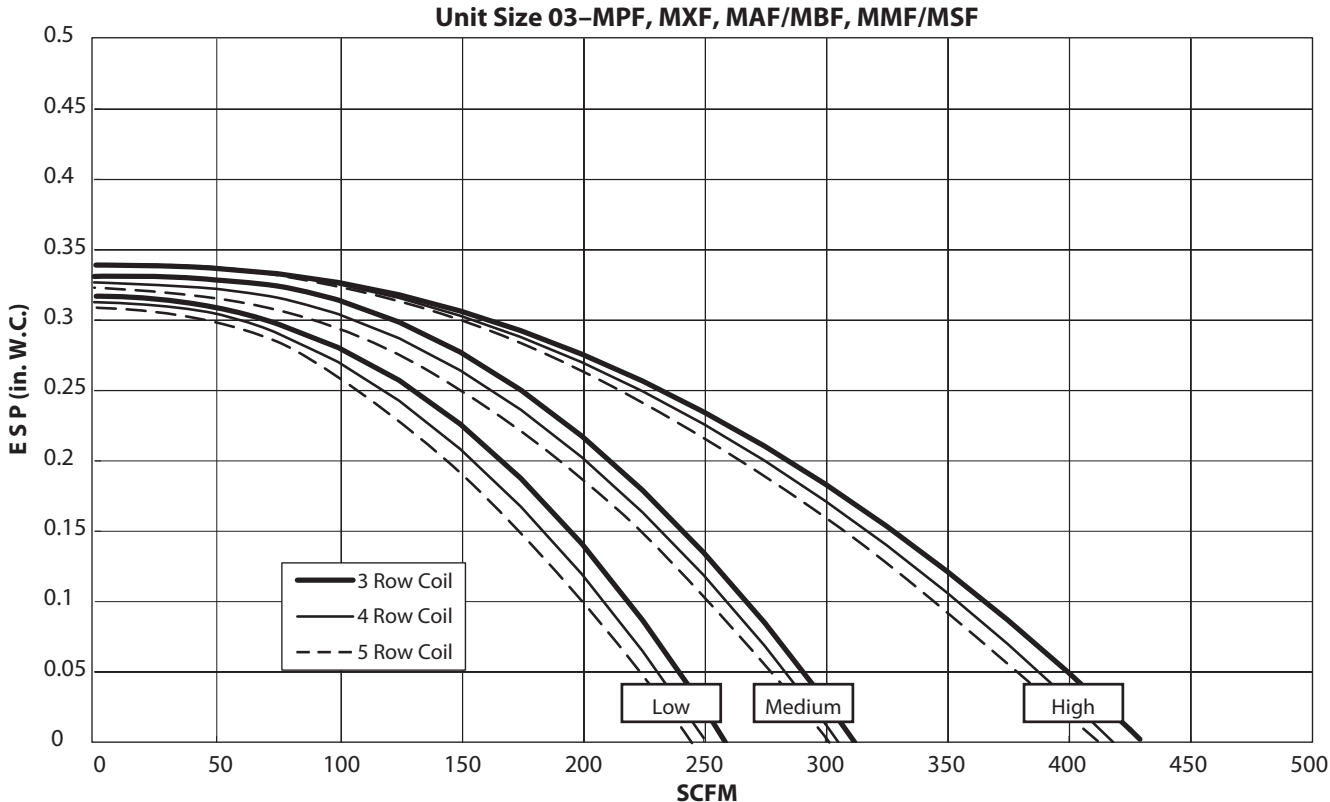
Blower Performance for Hi-Performance Series, Cont'd.

Air Performance (60 Hz) for Hi-Performance Series, cont'd.

Model	Coil	Unit Size	CFM @ 0.0 ESP For Fan Speed			High Speed CFM @ ESP Indicated						
			Low	Med	High	0.10	0.20	0.25	0.30	0.40	0.50	0.60
HLF	3-Row	06	465	545	680	-	-	-	-	-	-	-
		08	490	670	820	-	-	-	-	-	-	-
		10	660	835	1020	-	-	-	-	-	-	-
		12	810	960	1240	-	-	-	-	-	-	-
		14	700	1105	1470	-	-	-	-	-	-	-
		16	685	1085	1590	-	-	-	-	-	-	-
		18	1155	1505	1800	-	-	-	-	-	-	-
		20	1280	1675	2030	-	-	-	-	-	-	-
	4-Row	06	460	540	670	-	-	-	-	-	-	-
		08	480	665	810	-	-	-	-	-	-	-
		10	645	820	1000	-	-	-	-	-	-	-
		12	795	945	1220	-	-	-	-	-	-	-
		14	680	1090	1450	-	-	-	-	-	-	-
		16	680	1070	1570	-	-	-	-	-	-	-
		18	1140	1485	1780	-	-	-	-	-	-	-
		20	1260	1650	2000	-	-	-	-	-	-	-
	6-Row	06	445	520	650	-	-	-	-	-	-	-
		08	465	640	780	-	-	-	-	-	-	-
		10	620	785	960	-	-	-	-	-	-	-
		12	775	925	1190	-	-	-	-	-	-	-
		14	665	1050	1400	-	-	-	-	-	-	-
		16	650	1030	1510	-	-	-	-	-	-	-
		18	1090	1420	1700	-	-	-	-	-	-	-
		20	1225	1600	1940	-	-	-	-	-	-	-

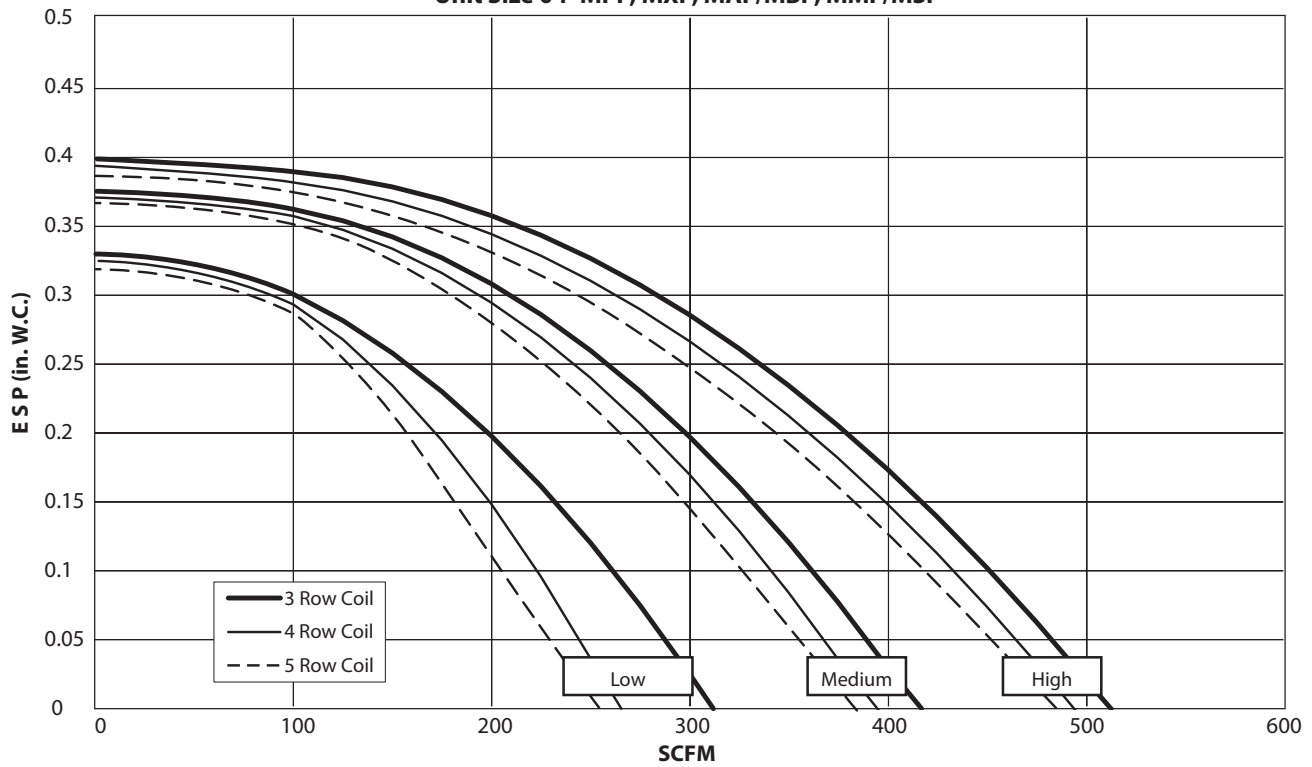
NOTES: 1. Tabled values are standard CFM at sea level, 70°F with dry coil.
 2. Ratings include factory installed filter and/or grille, where applicable.

Fan Performance Curves for Modular Hi-Rise Series

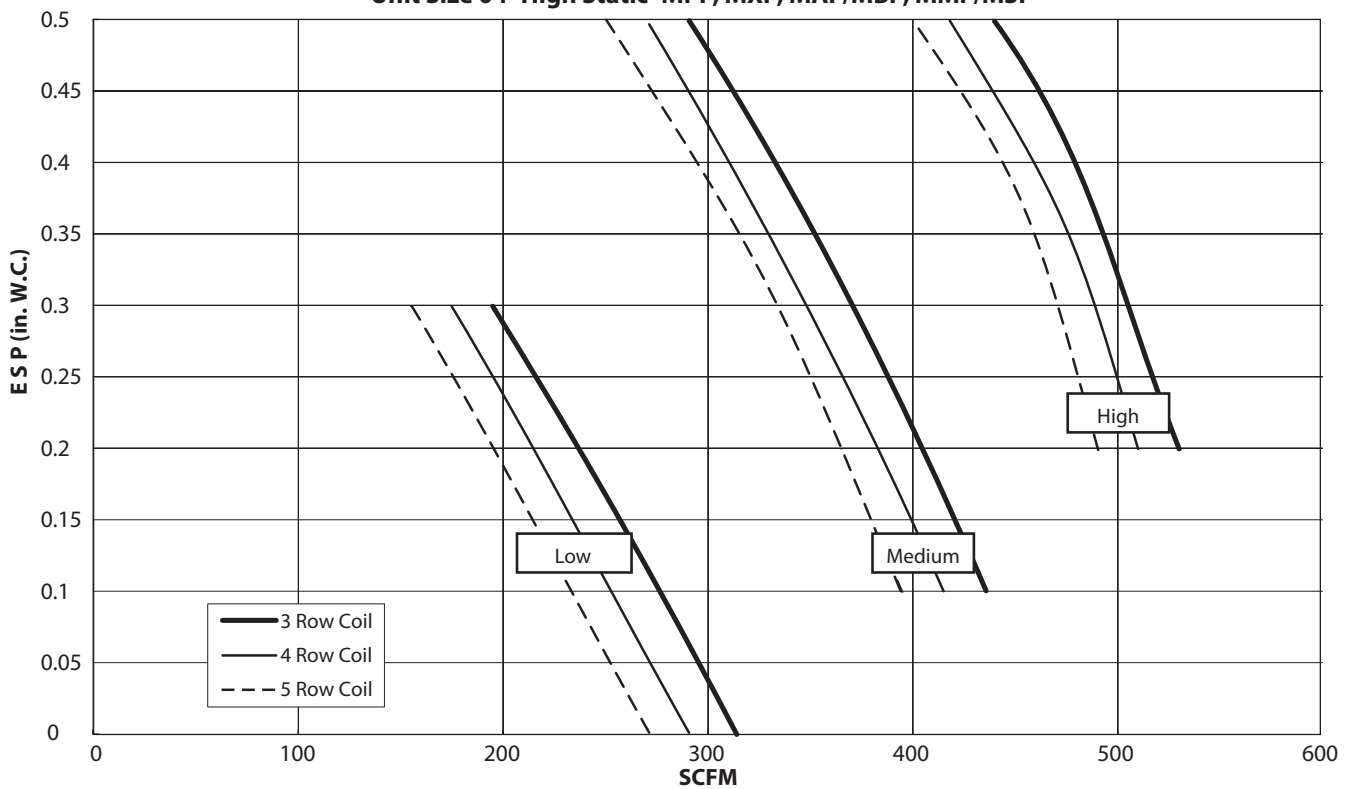


Fan Performance Curves for Modular Hi-Rise Series, Cont'd.

Unit Size 04-MPF, MXF, MAF/MBF, MMF/MSF

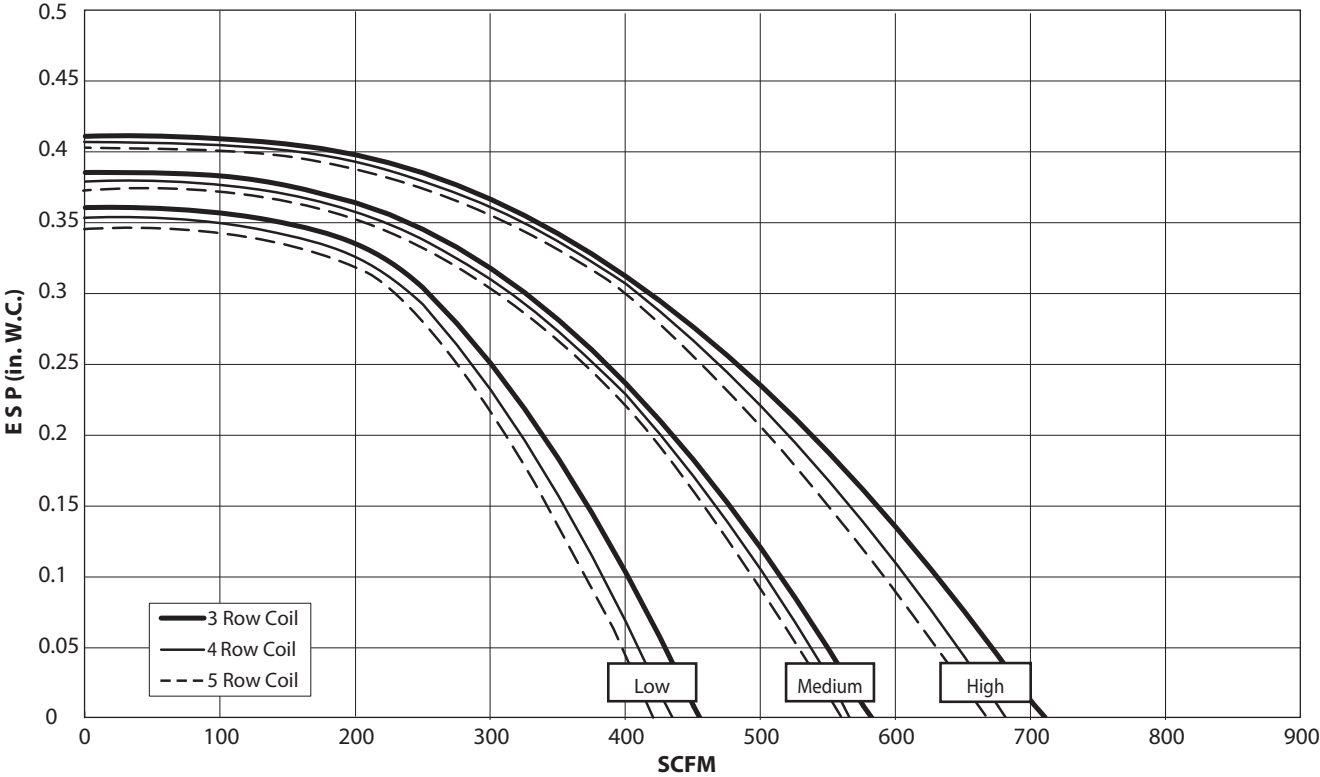


Unit Size 04-High Static-MPF, MXF, MAF/MBF, MMF/MSF

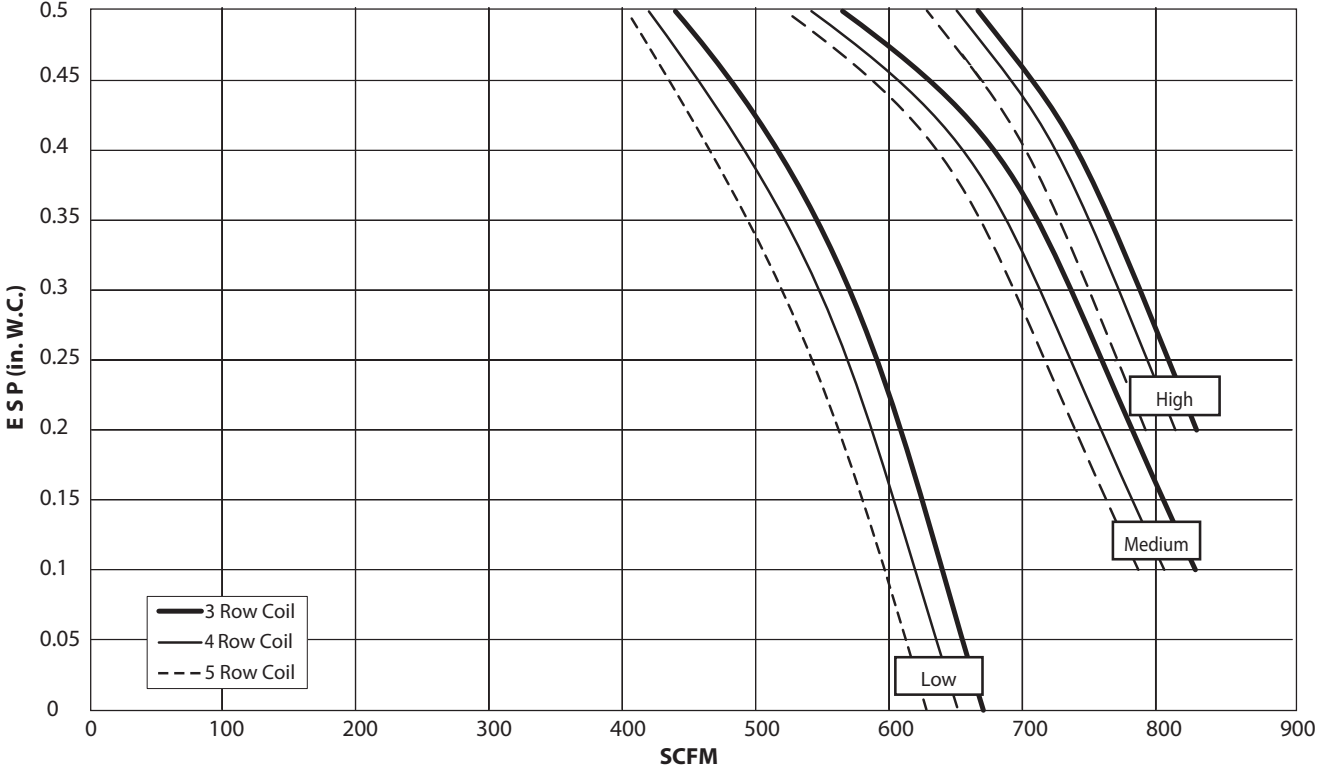


Fan Performance Curves for Modular Hi-Rise Series, Cont'd.

Unit Size 06-MPF, MXF, MAF/MBF, MMF/MSF

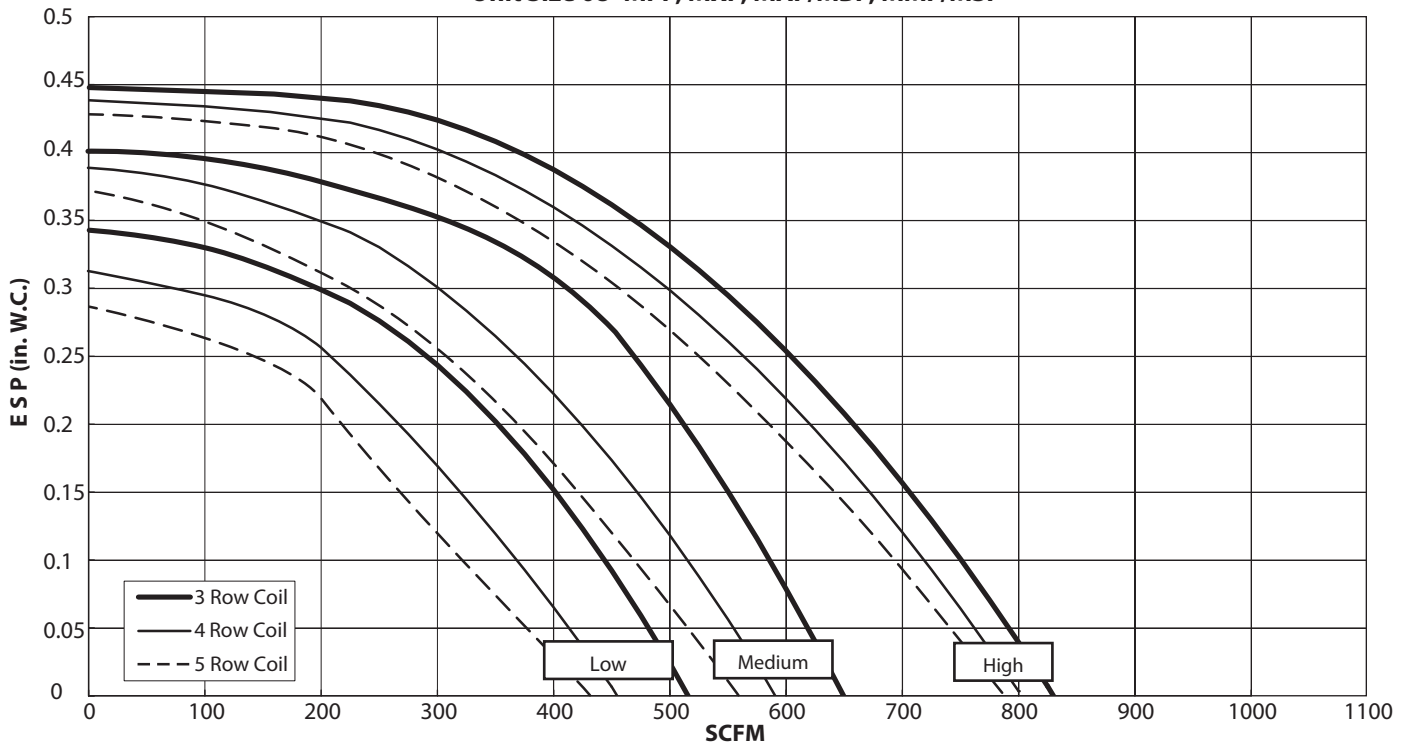


Unit Size 06-High Static-MPF, MXF, MAF/MBF, MMF/MSF

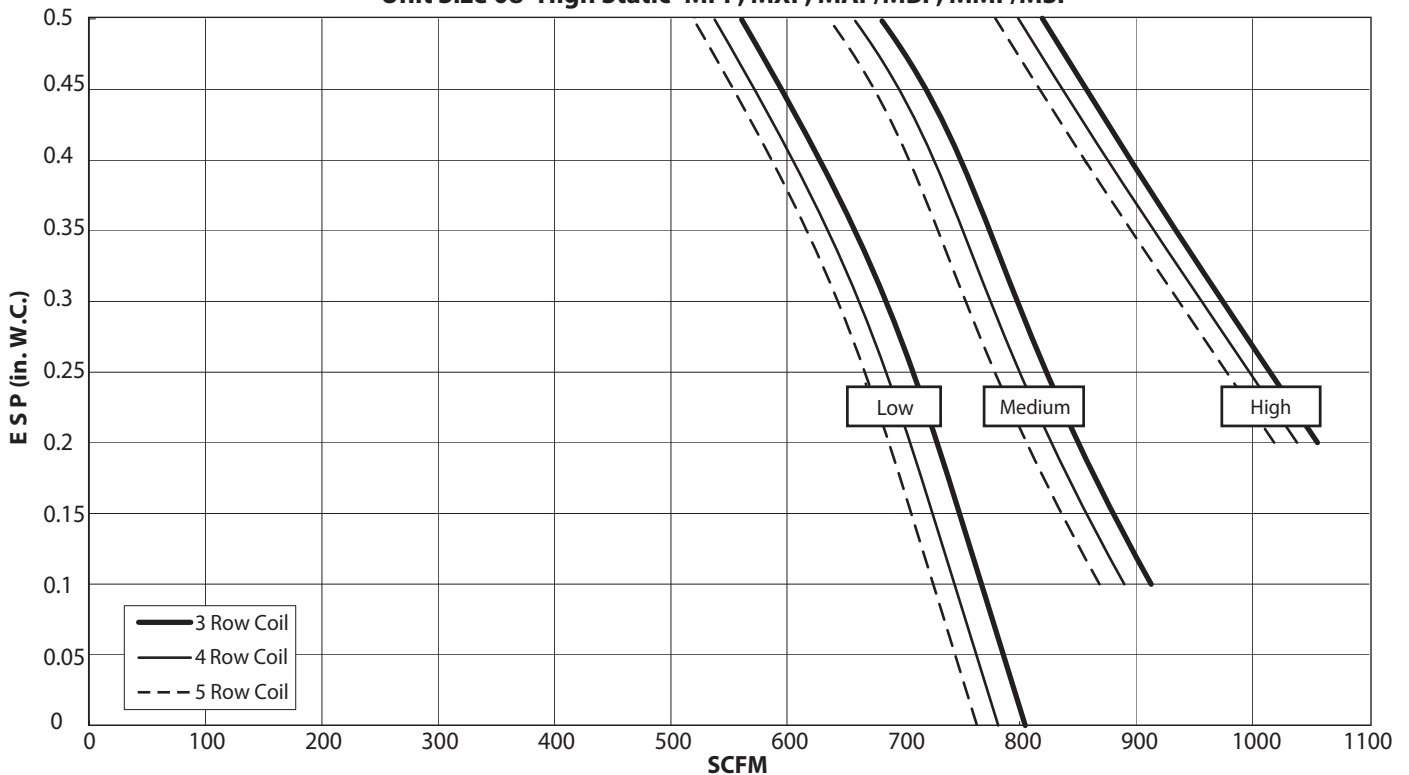


Fan Performance Curves for Modular Hi-Rise Series, Cont'd.

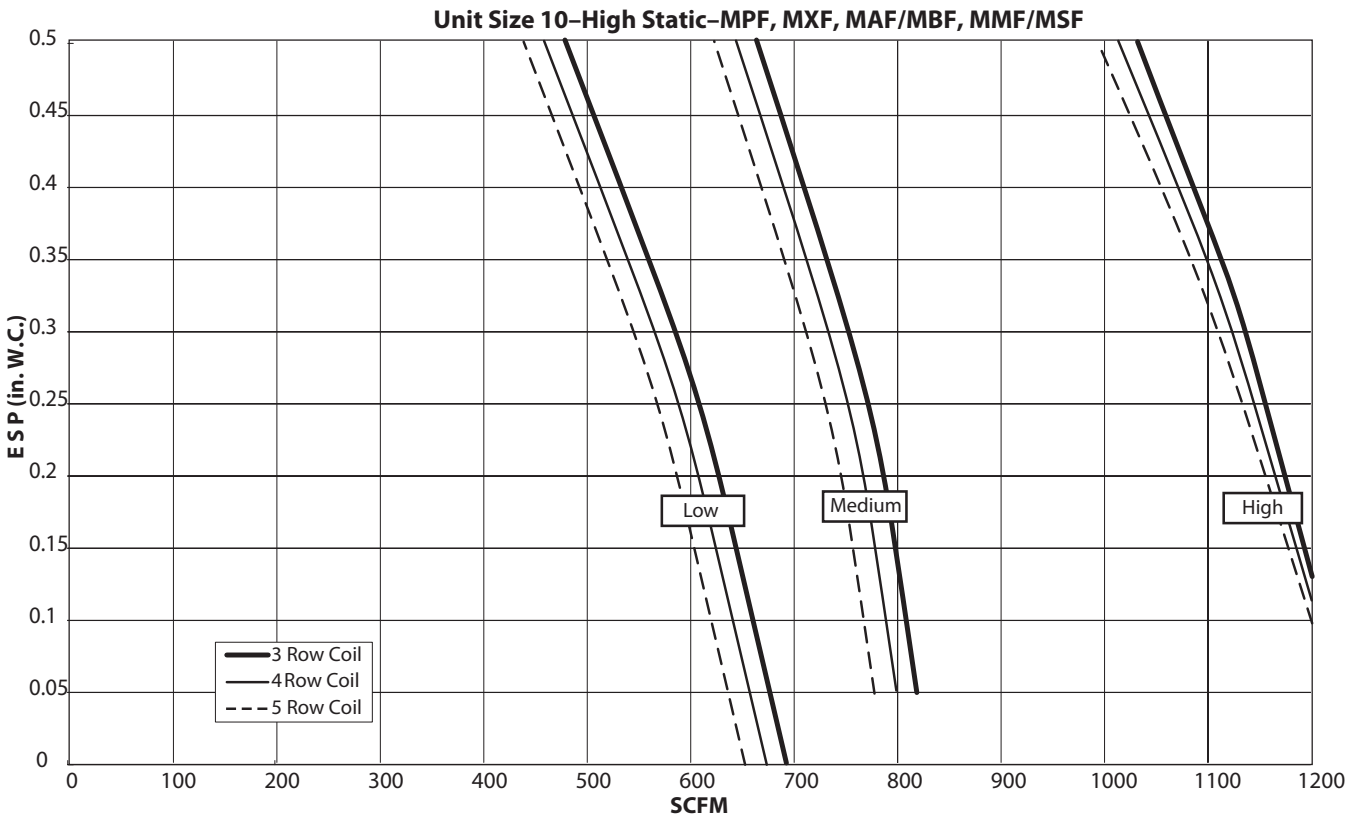
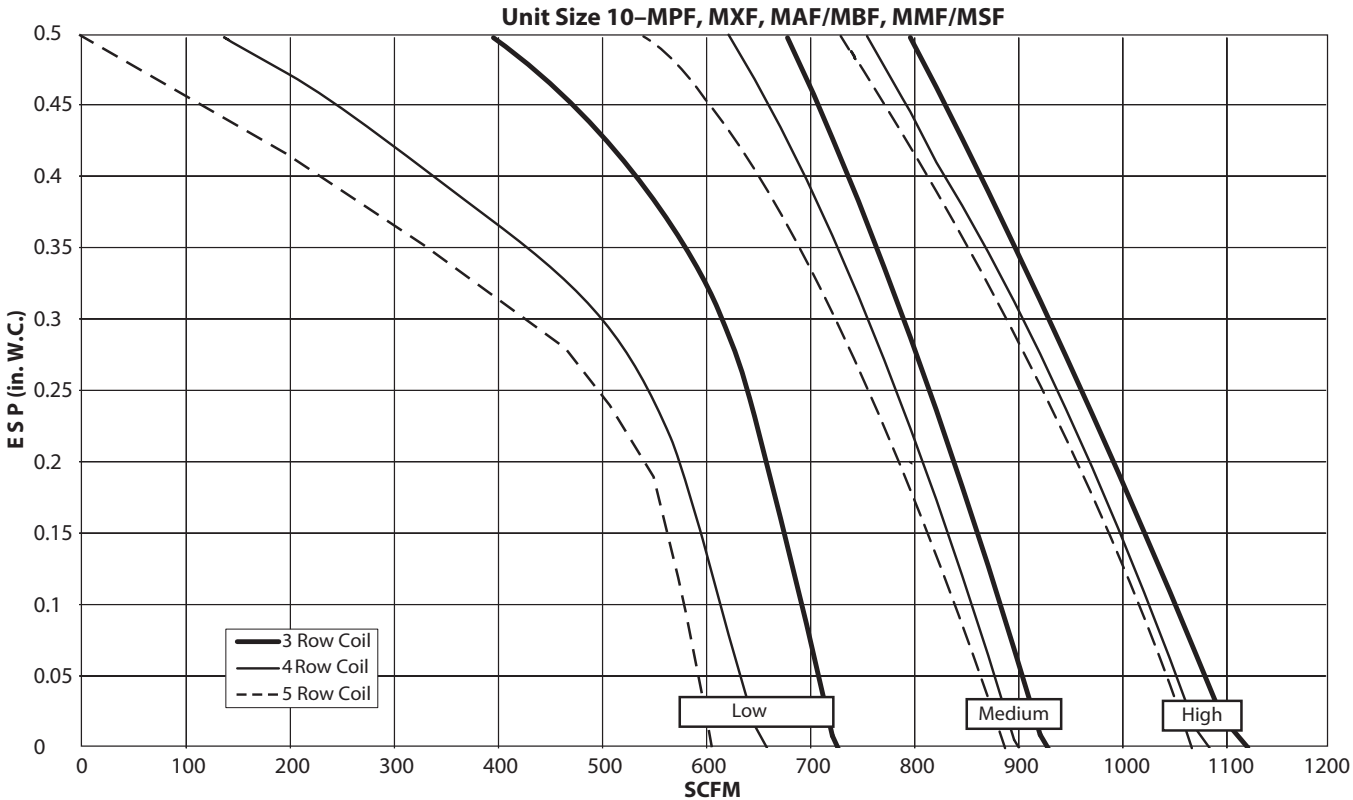
Unit Size 08-MPF, MXF, MAF/MBF, MMF/MSF



Unit Size 08-High Static-MPF, MXF, MAF/MBF, MMF/MSF

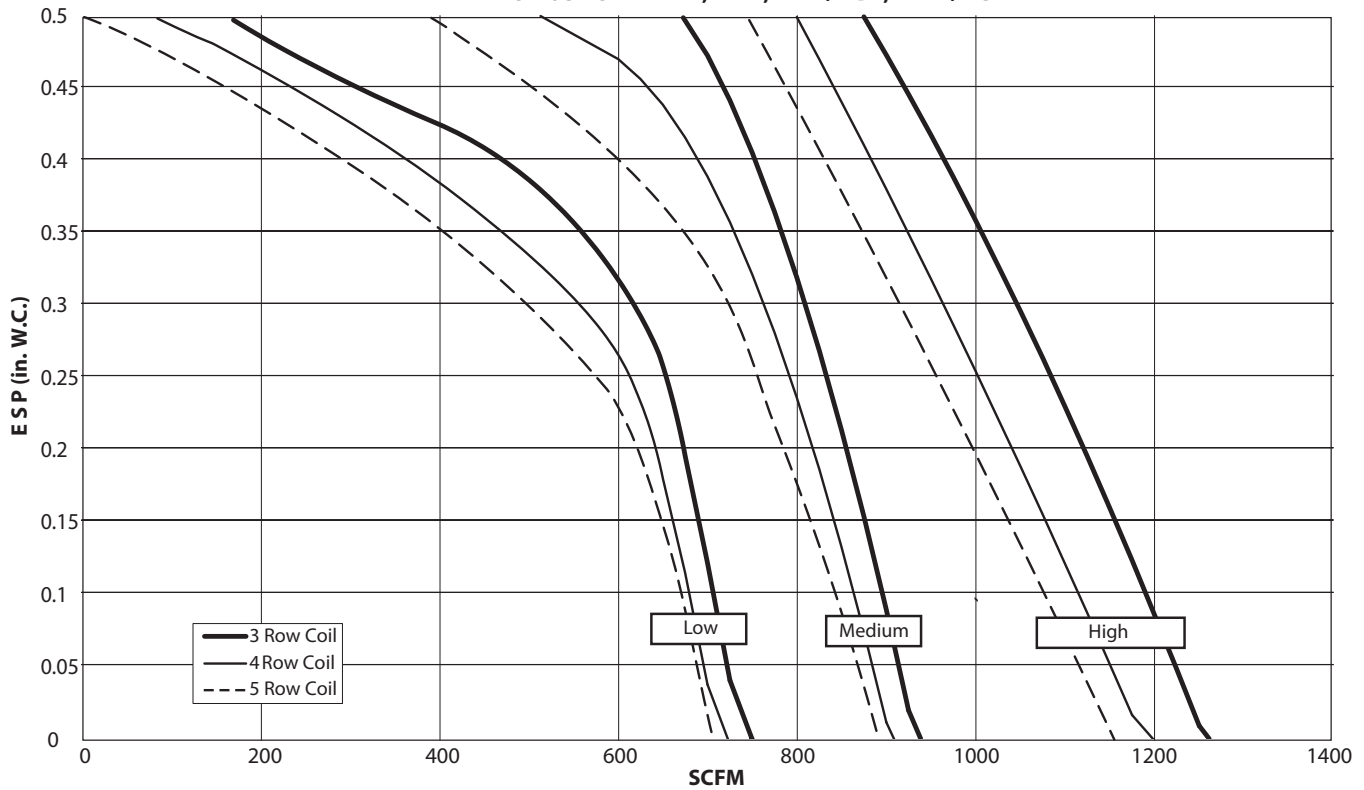


Fan Performance Curves for Modular Hi-Rise Series, Cont'd.

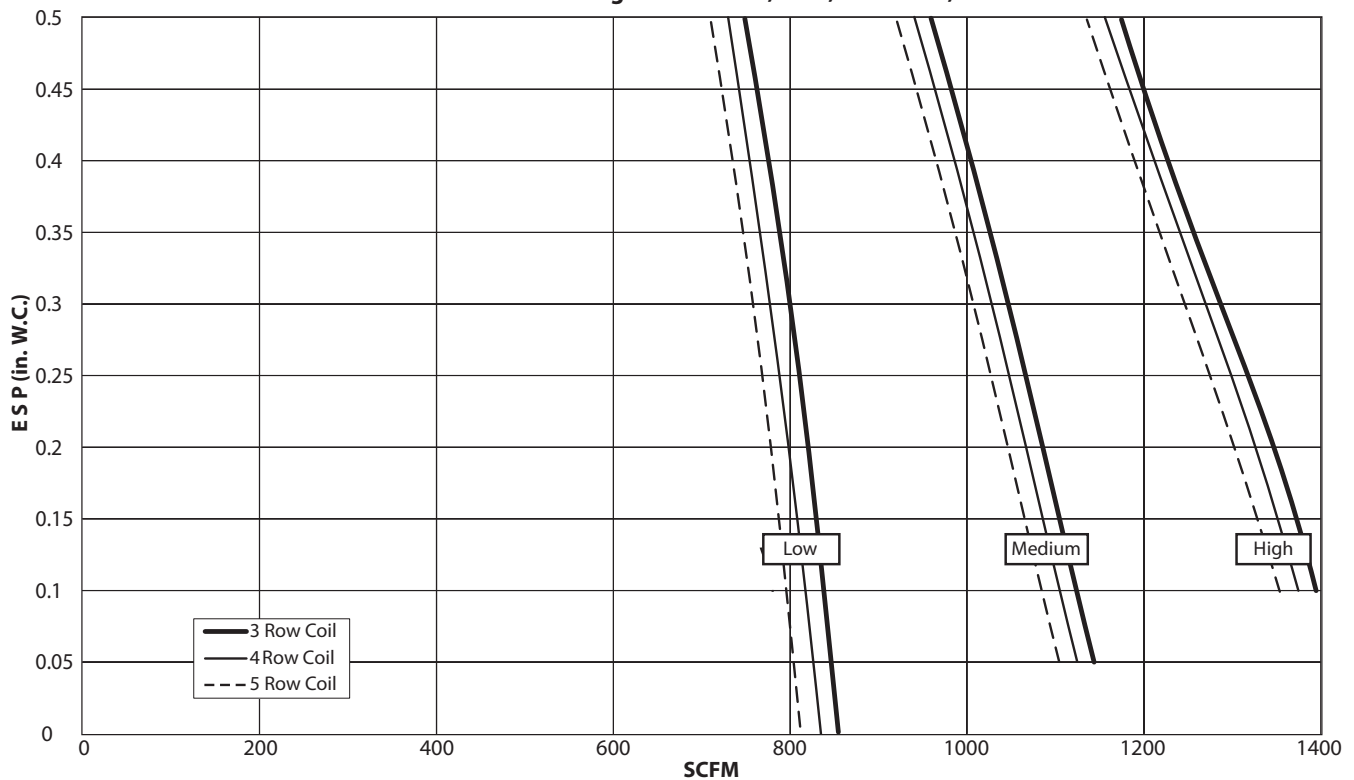


Fan Performance Curves for Modular Hi-Rise Series, Cont'd.

Unit Size 12-MPF, MXF, MAF/MBF, MMF/MSF



Unit Size 12-High Static-MPF, MXF, MAF/MBF, MMF/MSF



Motor Data for Vertical Series

Thermal Overload Protection and UL Listing

All permanently lubricated split-capacitor motors furnished by IEC contain internal thermal-overload protection. The overload automatically resets when the temperature returns to a safe limit.

Motor Performance Data – FHF, FXF, FSF

Voltage	Fan Speed	Unit Size	02	03	04	06	08	10	12
		Nominal HP	1/30	1/30	1/12	1/6	1/6	(2) 1/12	(2) 1/6
115 V 60 Hz 1-Phase	High	Amps	0.53	0.83	1.25	2.00	2.10	2.20	4.00
		Watts	80	80	130	200	210	250	370
	Medium	Amps	0.31	0.48	0.70	1.30	1.30	1.30	2.50
		Watts	50	50	75	140	140	145	265
	Low	Amps	0.27	0.33	0.47	0.57	0.61	0.40	1.25
		Watts	35	35	50	60	65	100	125
208 V 60 Hz 1-Phase	High	Amps	0.45	0.46	0.64	1.00	1.00	1.20	2.00
		Watts	85	85	110	190	195	210	340
	Medium	Amps	0.29	0.29	0.40	0.59	0.69	0.80	1.15
		Watts	60	60	85	130	135	160	220
	Low	Amps	0.14	0.14	0.22	0.47	0.47	0.45	0.84
		Watts	28	28	45	90	90	90	170
230 V 60 Hz 1-Phase	High	Amps	0.45	0.46	0.64	1.00	1.00	1.20	2.00
		Watts	100	102	120	205	215	235	370
	Medium	Amps	0.31	0.31	0.43	0.71	0.71	0.85	1.40
		Watts	70	70	100	150	155	190	285
	Low	Amps	0.15	0.15	0.24	0.50	0.50	0.50	1.00
		Watts	33	33	55	105	110	115	200
277 V 60 Hz 1-Phase	High	Amps	0.33	0.34	0.63	0.92	0.92	1.26	1.84
		Watts	80	82	140	205	210	270	370
	Medium	Amps	0.26	0.26	0.44	0.57	0.58	0.82	1.10
		Watts	65	67	110	140	140	200	255
	Low	Amps	0.16	0.17	0.25	0.34	0.35	0.45	0.65
		Watts	40	43	65	80	85	125	145

NOTES: 1. Fan motor amps and watts only. Add circulator power for total rating (see page 40).
 2. Consult factory for 50 Hz applications.

Motor Data for Vertical Series, Cont'd.

Motor Performance Data – LHF, LXF

Voltage	Fan Speed	Unit Size	02	03	04	06
		Nominal HP	1/20	1/12	1/12	(2) 1/12
115 V 60 Hz 1-Phase	High	Amps	0.34	1.35	1.45	2.70
		Watts	68	135	150	260
	Medium	Amps	0.30	0.60	0.60	1.20
		Watts	45	65	65	125
	Low	Amps	0.20	0.30	0.30	0.80
		Watts	25	40	40	85
208 V 60 Hz 1-Phase	High	Amps	0.46	0.56	0.60	1.00
		Watts	56	109	116	205
	Low	Amps	0.20	0.30	0.30	0.50
		Watts	35	55	58	103
230 V 60 Hz 1-Phase	High	Amps	0.50	0.60	0.64	1.10
		Watts	64	128	138	245
	Low	Amps	0.22	0.28	0.30	0.52
		Watts	42	65	67	120
277 V 60 Hz 1-Phase	High	Amps	0.35	0.58	0.58	1.16
		Watts	85	135	140	260
	Medium	Amps	0.12	0.33	0.34	0.65
		Watts	45	85	88	155
	Low	Amps	0.07	0.22	0.22	0.40
		Watts	35	55	57	100

NOTES: 1. Fan motor amps and watts only. Add circulator power for total rating (see page 40).
 2. Consult factory for 50 Hz applications.

Motor Data for Horizontal Series

Motor Performance Data – CHF, CPF, CXF, CBF

Voltage	Fan Speed	Unit Size	02	03	04	06	08	10	12
		Nominal HP	1/30	1/30	1/12	1/12	1/6	(2) 1/12	(2) 1/6
115 V 60 Hz 1 Phase	High	Amps	0.53	0.83	1.25	1.25	2.10	2.70	4.00
		Watts	87	85	165	165	235	305	435
	Medium	Amps	0.31	0.50	0.70	0.72	1.50	1.40	2.80
		Watts	55	55	80	80	160	150	305
	Low	Amps	0.27	0.34	0.45	0.45	1.20	.90	1.20
		Watts	35	35	50	50	120	100	130
208 V 60 Hz 1 Phase	High	Amps	0.45	0.46	0.64	0.64	1.00	1.25	2.00
		Watts	86	89	115	130	195	260	340
	Medium	Amps	0.29	0.29	0.43	0.47	0.69	0.94	1.33
		Watts	60	60	89	100	135	190	255
	Low	Amps	0.15	0.15	0.22	0.24	0.47	0.46	0.94
		Watts	28	28	45	48	90	90	180
230 V 60 Hz 1 Phase	High	Amps	0.45	0.45	0.64	0.64	1.00	1.25	2.00
		Watts	103	106	135	155	210	290	380
	Medium	Amps	0.31	0.32	0.45	0.52	0.70	1.00	1.34
		Watts	70	73	105	115	150	220	285
	Low	Amps	0.15	0.15	0.24	0.28	0.50	0.50	1.00
		Watts	33	33	53	60	105	110	210
277 V 60 Hz 1 Phase	High	Amps	0.33	0.34	0.64	0.64	0.92	1.25	1.84
		Watts	80	80	150	155	240	270	440
	Medium	Amps	0.26	0.26	0.43	0.43	0.62	0.80	1.20
		Watts	64	66	110	110	160	200	300
	Low	Amps	0.16	0.16	0.25	0.35	0.35	0.25	0.66
		Watts	40	43	60	90	90	75	175

NOTES: 1. Fan motor amps and watts only. Add circulator power for total rating (see page 40).
2. Consult factory for 50 Hz applications.

Motor Data for Hi-Performance Series

Motor Performance Data – HHF

Voltage	Fan Speed	Unit Size	06	08	10	12	14	16	18	20
		Nominal HP	1/10	1/8	1/5	(2) 1/10	(2) 1/10	(2) 1/5	(2) 1/5	(2) 1/4
115 V 60 Hz 1-Phase	High	Amps	2.70	3.10	5.60	5.30	6.40	8.80	11.80	11.80
		Watts	280	330	470	550	650	900	1180	1180
	Medium	Amps	2.00	2.25	3.70	2.92	4.60	6.90	8.30	8.30
		Watts	200	225	360	305	440	705	770	770
	Low	Amps	1.50	1.44	2.60	1.93	3.00	4.20	5.30	5.30
		Watts	140	135	240	205	280	430	460	460
208/230 V 60 Hz 1-Phase	High	Amps	1.10	1.80	2.00	2.10	2.10	3.60	4.10	4.10
		Watts	240	420	430	450	465	740	925	925
	Medium	Amps	0.74	1.26	1.20	1.45	1.45	1.80	2.48	2.48
		Watts	175	280	260	325	325	360	545	545
	Low	Amps	0.50	0.73	0.80	1.00	1.00	1.20	1.60	1.60
		Watts	1.10	155	165	215	220	220	330	330
277 V 60 Hz 1-Phase	High	Amps	1.15	1.21	1.62	2.40	2.70	3.60	3.72	3.72
		Watts	275	275	425	550	735	940	980	980
	Medium	Amps	0.69	0.69	1.04	1.38	1.90	2.20	2.20	2.20
		Watts	175	175	260	355	510	560	550	550
	Low	Amps	0.33	0.33	0.65	0.67	1.30	1.40	1.40	1.40
		Watts	90	90	155	175	330	335	320	320

NOTES: 1. Fan motor amps and watts only. Add circulator power for total rating (see page 40).

Motor Performance Data – HPF, HXF

Voltage	Fan Speed	Unit Size	06	08	10	12	14	16	18	20
		Nominal HP	1/10	1/8	1/5	(2) 1/10	(2) 1/10	(2) 1/5	(2) 1/5	(2) 1/4
115 V 60 Hz 1-Phase	High	Amps	2.60	3.00	4.50	5.40	6.80	9.80	10.20	10.20
		Watts	265	310	440	550	690	900	1015	1020
	Medium	Amps	1.95	2.30	3.40	3.90	5.40	7.70	7.80	7.80
		Watts	195	220	330	390	560	725	745	750
	Low	Amps	1.54	1.50	2.50	3.10	3.50	5.24	5.30	5.30
		Watts	155	140	225	305	280	450	450	460
208/230 V 60 Hz 1-Phase	High	Amps	1.00	1.45	1.80	3.20	3.30	3.00	3.70	3.70
		Watts	235	325	410	700	720	680	820	820
	Medium	Amps	0.72	0.95	1.10	2.00	2.00	2.00	2.20	2.20
		Watts	165	210	250	430	440	445	500	510
	Low	Amps	0.49	0.62	0.76	1.48	1.48	1.33	1.50	1.50
		Watts	110	135	160	305	310	285	330	330
277 V 60 Hz 1-Phase	High	Amps	1.10	1.40	1.51	2.40	2.65	3.20	3.50	3.52
		Watts	275	275	395	535	700	830	900	925
	Medium	Amps	0.70	0.69	1.10	1.40	1.96	2.00	2.23	2.23
		Watts	175	175	260	360	495	510	550	550
	Low	Amps	0.33	0.34	0.65	0.70	1.30	1.30	1.36	1.36
		Watts	90	90	155	190	300	300	320	320

NOTES: 1. Fan motor amps and watts only. Add circulator power for total rating (see page 40).

Motor Data for Hi-Performance Series, Cont'd.

Motor Performance Data – HLF

Voltage	Fan Speed	Unit Size	06	08	10	12	14	16	18	20
		Nominal HP	1/10	1/8	1/5	(2) 1/10	(2) 1/10	(2) 1/5	(2) 1/5	(2) 1/4
115 V 60 Hz 1-Phase	High	Amps	2.40	3.10	3.70	4.40	5.00	6.50	7.40	8.20
		Watts	260	275	380	490	520	670	800	840
	Medium	Amps	1.70	2.10	3.00	3.00	3.00	4.80	6.60	6.60
		Watts	195	205	300	310	320	470	670	685
	Low	Amps	1.15	1.58	2.00	2.10	2.10	3.10	4.10	4.20
		Watts	125	155	210	210	210	300	420	425
208/230 V 60 Hz 1-Phase	High	Amps	1.00	1.05	1.80	2.00	2.10	2.90	3.20	3.44
		Watts	235	230	410	450	470	590	705	810
	Medium	Amps	0.72	0.65	1.05	1.40	1.50	2.10	2.00	2.20
		Watts	165	145	220	300	340	440	420	495
	Low	Amps	0.48	0.48	0.75	1.05	1.10	1.45	1.55	1.50
		Watts	105	105	160	224	230	300	315	320
277 V 60 Hz 1-Phase	High	Amps	0.72	0.90	1.27	1.44	1.60	1.70	2.80	3.30
		Watts	205	270	285	370	450	470	620	870
	Medium	Amps	0.51	0.71	0.73	0.89	1.28	1.20	1.65	2.20
		Watts	140	190	180	235	330	350	420	545
	Low	Amps	0.31	0.57	0.37	0.63	0.90	0.90	0.95	1.36
		Watts	90	155	95	165	250	250	230	320

NOTES: 1. Fan motor amps and watts only. Add circulator power for total rating (see page 40).

Motor Data for Modular Hi-Rise Series

Motor Performance Data – MPF, MXF

Voltage	Fan Speed	Unit Size	03	04	06	08	10	12
		Nominal HP	1/30	1/20	1/15	1/5	1/5	1/4
115 V 60 Hz 1-Phase	High	Amps	.80	1.20	1.30	2.30	3.30	4.30
		Watts	85	115	135	210	325	420
	Medium	Amps	.60	.70	1.00	1.40	2.46	2.80
		Watts	60	70	100	145	255	285
	Low	Amps	.40	.50	.65	1.00	2.00	2.20
		Watts	40	50	65	90	190	210
208 V 60 Hz 1-Phase	High	Amps	.31	.60	.70	.96	1.40	2.20
		Watts	122	114	125	185	300	355
	Medium	Amps	.35	.32	.46	.77	1.10	1.20
		Watts	66	63	95	137	214	235
	Low	Amps	.24	.21	.35	.68	.86	.80
		Watts	42	40	70	122	162	150
230 V 60 Hz 1-Phase	High	Amps	.31	.60	.70	.96	1.40	2.20
		Watts	140	130	140	193	320	405
	Medium	Amps	.36	.33	.46	.77	1.10	1.20
		Watts	76	72	105	152	245	270
	Low	Amps	.25	.22	.38	.69	.91	.85
		Watts	50	47	85	140	186	180
277 V 60 Hz 1-Phase	High	Amps	.30	.50	.60	.75	1.20	1.60
		Watts	80	115	135	200	325	420
	Medium	Amps	.20	.30	.40	.60	1.00	1.17
		Watts	60	75	100	160	270	300
	Low	Amps	.10	.20	.35	.50	.75	.90
		Watts	40	50	77	115	180	200

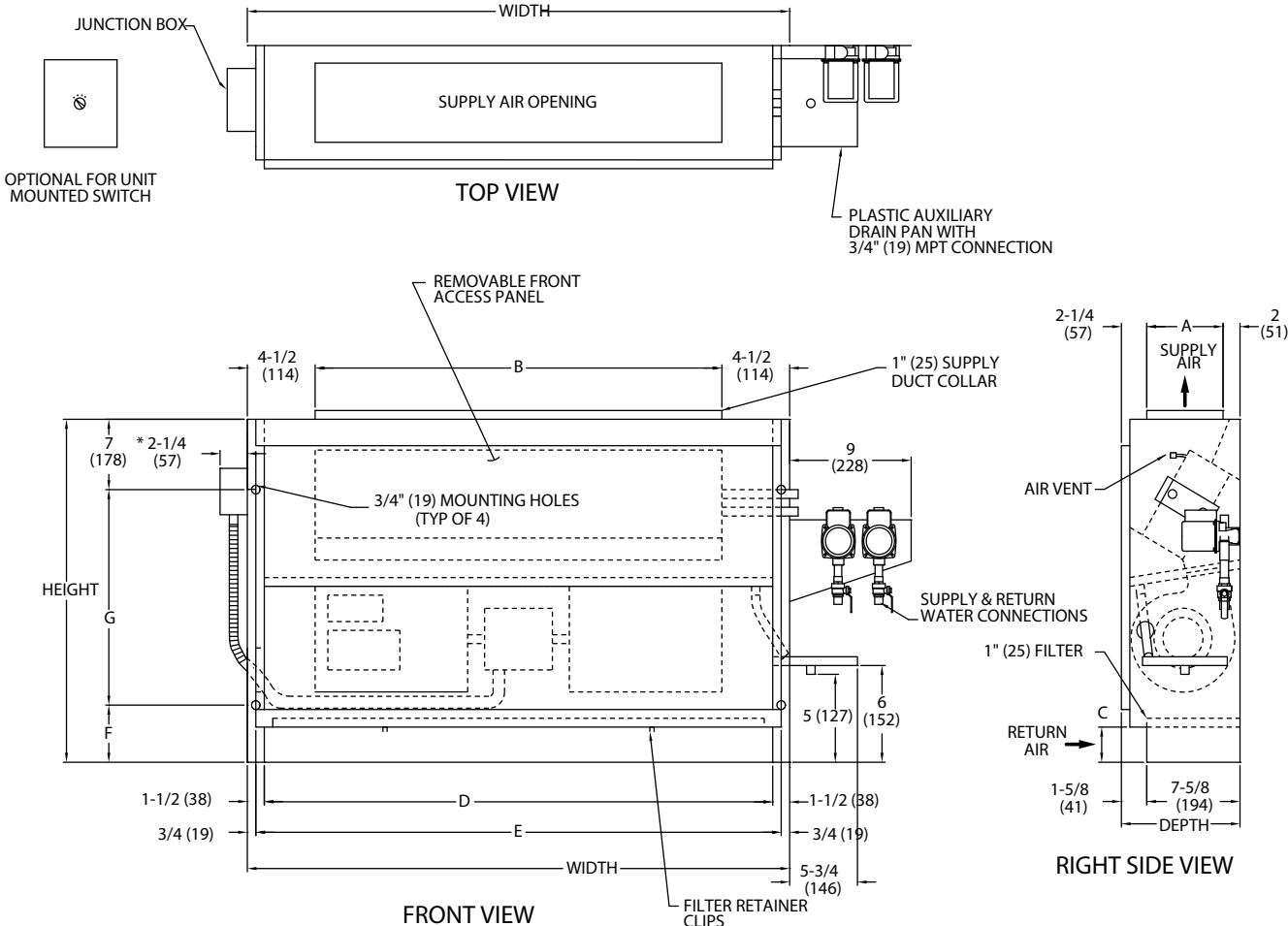
NOTES: 1. Fan motor amps and watts only. Add circulator power for total rating (see below).

Circulator Performance Data

Mode	Model Size	WATTS	AMPS @115 Volts
Cooling	CPF-FXF 02 - 12	65	0.52
	HPF 06 - 10		
	HPF 12 - 20	95	0.79
Heating	All Sizes	65	0.52

Submittal Data

FHF – SureFlow® Vertical Hideaway



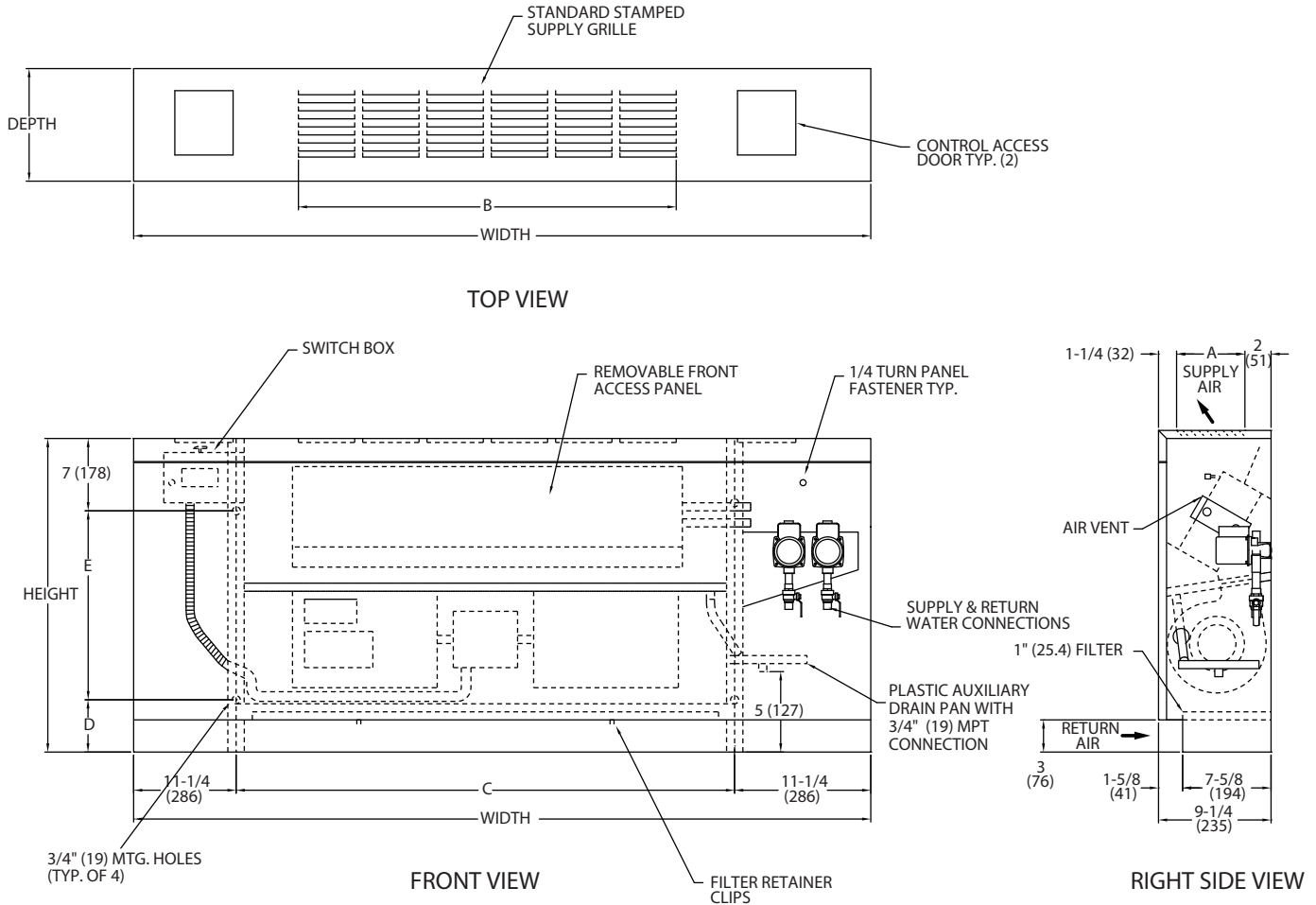
Size	Depth	Width	Height	Supply Air		Return Opening		Mounting Holes		
				A	B	C	D	E	F	G
02	9-1/4 (235)	25 (635)	25 (635)	5 (127)	16 (406)	3 (76)	22 (559)	23-1/2 (597)	4 (102)	14 (356)
03	9-1/4 (235)	29 (737)	25 (635)	5 (127)	20 (508)	3 (76)	26 (660)	27-1/2 (699)	4 (102)	14 (356)
04	9-1/4 (235)	35 (889)	25 (635)	5 (127)	26 (660)	3 (76)	32 (813)	33-1/2 (851)	4 (102)	14 (356)
06	9-1/4 (235)	45 (1143)	25 (635)	5 (127)	36 (914)	3 (76)	42 (1067)	43-1/2 (1105)	4 (102)	14 (356)
08	9-1/4 (235)	47 (1194)	25 (635)	5 (127)	38 (965)	3 (76)	45 (1143)	45-1/2 (1156)	4 (102)	14 (356)
10	9-1/4 (235)	61 (1549)	25 (635)	5 (127)	52 (1321)	3 (76)	58 (1473)	59-1/2 (1511)	4 (102)	14 (356)
12	9-1/4 (235)	69 (1753)	25 (635)	5 (127)	60 (1524)	3 (76)	66 (1676)	67-1/2 (1715)	4 (102)	14 (356)

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - RH shown, LH opposite.
 - Addition of electric heat does not alter cabinet dimensions.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.
 - * 5-3/4 (147) for optional unit mounted switch box.

Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

FSF – SureFlow® Vertical Cabinet



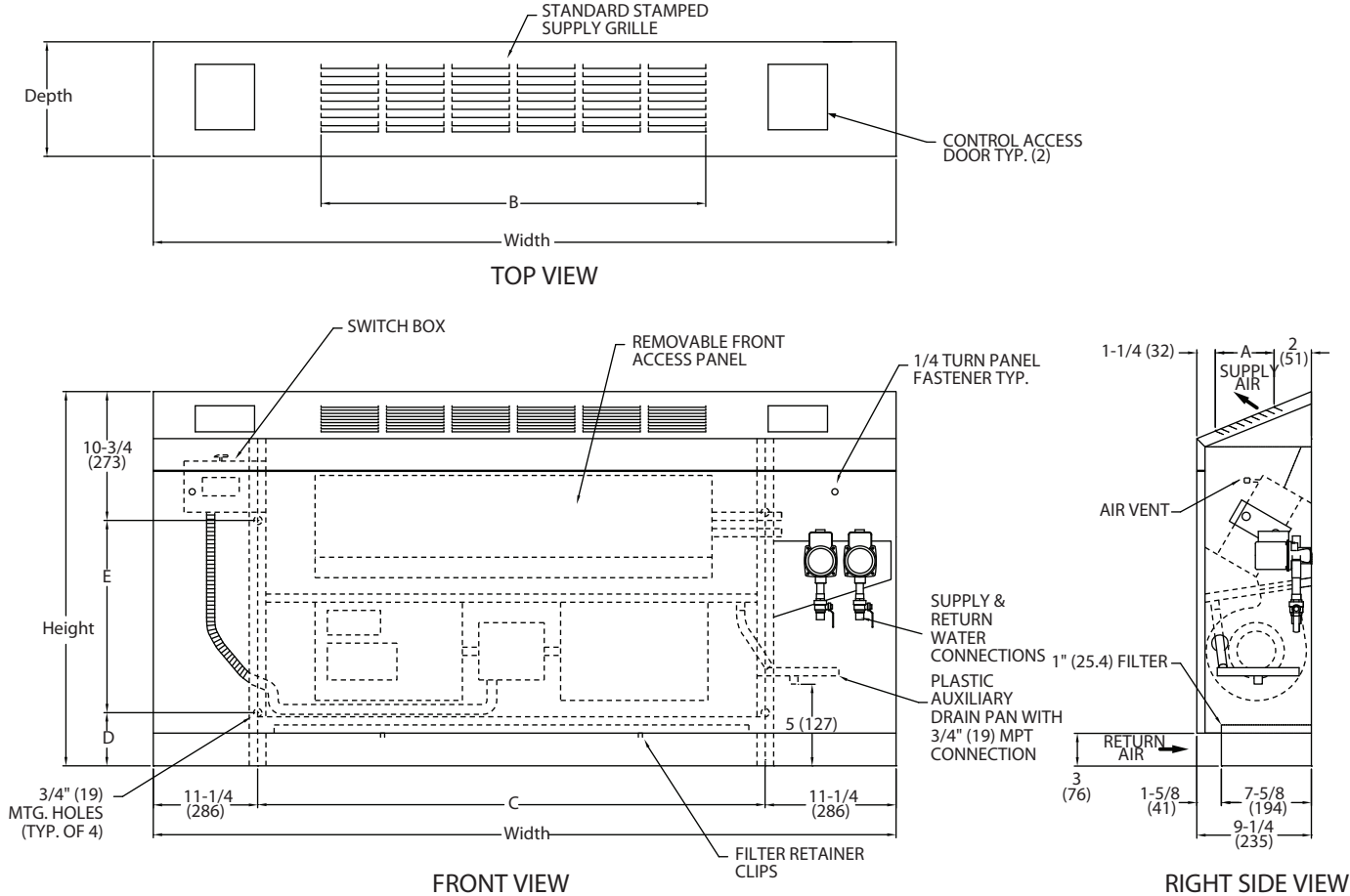
Size	Depth	Width	Height	Supply Air		Mounting Holes		
				A	B	C	D	E
02	9-1/4 (235)	46 (1168)	25 (635)	6 (152)	17-1/8 (435)	23-1/2 (597)	4 (102)	14 (356)
03	9-1/4 (235)	50 (1270)	25 (635)	6 (152)	21-1/2 (546)	27-1/2 (699)	4 (102)	14 (356)
04	9-1/4 (235)	56 (1422)	25 (635)	6 (152)	25-7/8 (657)	33-1/2 (851)	4 (102)	14 (356)
06	9-1/4 (235)	66 (1676)	25 (635)	6 (152)	39 (991)	43-1/2 (1105)	4 (102)	14 (356)
08	9-1/4 (235)	68 (1676)	25 (635)	6 (152)	39 (991)	45-1/2 (1156)	4 (102)	14 (356)
10	9-1/4 (235)	82 (2083)	25 (635)	6 (152)	52-1/8 (1324)	59-1/2 (1511)	4 (102)	14 (356)
12	9-1/4 (235)	90 (2286)	25 (635)	6 (152)	60-1/8 (1527)	67-1/2 (1715)	4 (102)	14 (356)

- NOTES:**
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 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - RH shown, LH opposite.
 - Addition of electric heat does not alter cabinet dimensions.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

FSF – SureFlow® Vertical Cabinet with Slope-Top



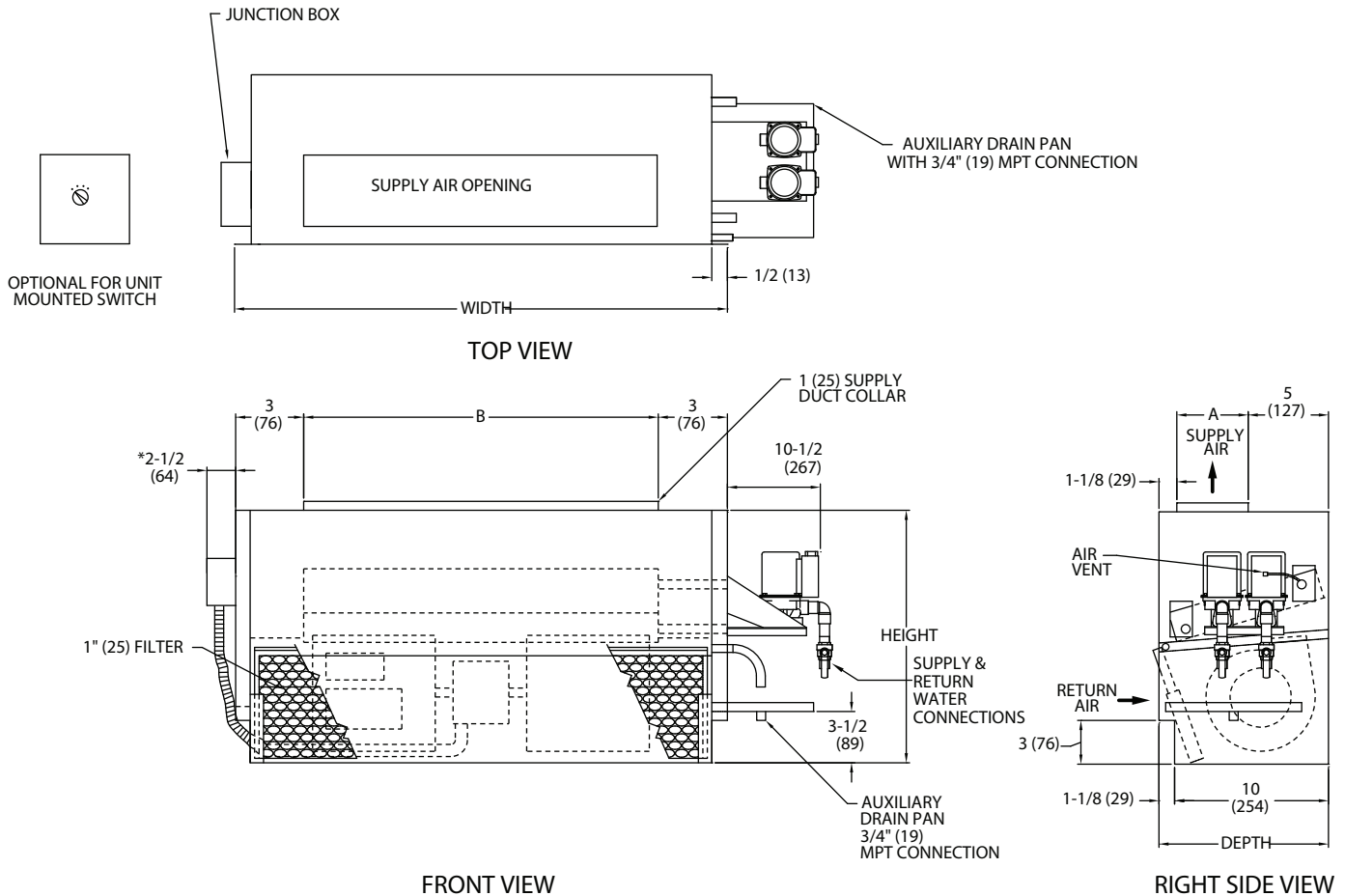
Size	Depth	Width	Height	Supply Air		Mounting Holes		
				A	B	C	D	E
02	9-1/4 (235)	46 (1168)	28-3/4 (730)	6 (152)	17-1/8 (435)	23-1/2 (597)	4 (102)	14 (356)
03	9-1/4 (235)	50 (1270)	28-3/4 (730)	6 (152)	21-1/2 (546)	27-1/2 (699)	4 (102)	14 (356)
04	9-1/4 (235)	56 (1422)	28-3/4 (730)	6 (152)	25-7/8 (657)	33-1/2 (851)	4 (102)	14 (356)
06	9-1/4 (235)	66 (1676)	28-3/4 (730)	6 (152)	39 (991)	43-1/2 (1105)	4 (102)	14 (356)
08	9-1/4 (235)	68 (1676)	28-3/4 (730)	6 (152)	39 (991)	45-1/2 (1156)	4 (102)	14 (356)
10	9-1/4 (235)	82 (2083)	28-3/4 (730)	6 (152)	52-1/8 (1324)	59-1/2 (1511)	4 (102)	14 (356)
12	9-1/4 (235)	90 (2286)	28-3/4 (730)	6 (152)	60-1/8 (1527)	67-1/2 (1715)	4 (102)	14 (356)

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - RH shown, LH opposite.
 - Addition of electric heat does not alter cabinet dimensions.
 - All unit supply/return water connections are 3/4" (1.9) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

LHF – SureFlow® Vertical Lowboy Hideaway



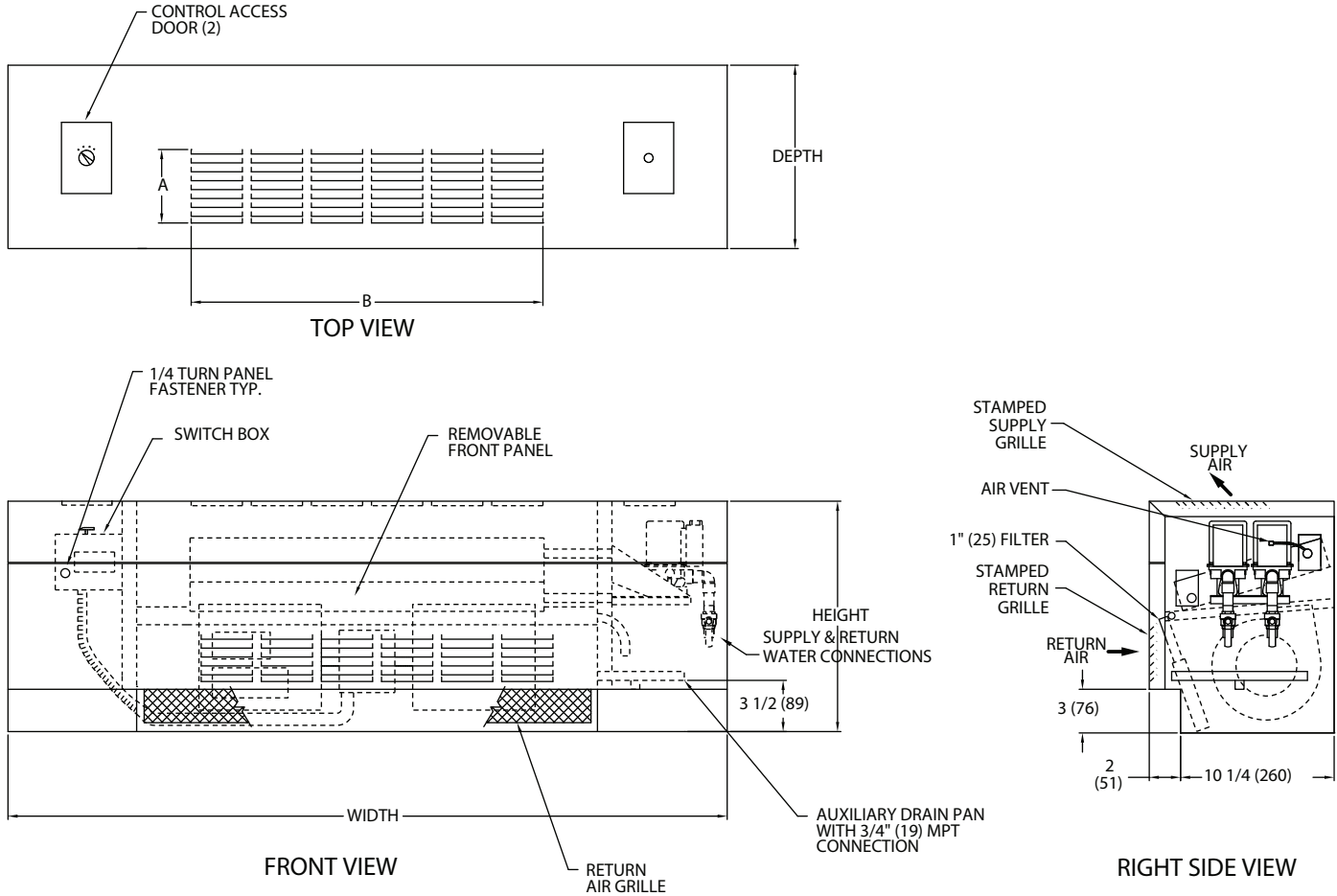
Size	Depth	Width	Height	Supply Air		Quantity/Unit	
				A	B	Blower	Motor
02	11-1/8 (283)	23 (584)	16-3/8 (416)	5 (127)	17 (432)	2	1
03	11-1/8 (283)	28 (711)	16-3/8 (416)	5 (127)	22 (559)	2	1
04	11-1/8 (283)	36 (914)	16-3/8 (416)	5 (127)	30 (762)	2	1
06	11-1/8 (283)	50 (1270)	16-3/8 (416)	5 (127)	44 (1118)	4	2

- NOTES:**
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 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - RH shown, LH opposite.
 - Addition of electric heat does not alter cabinet dimensions.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.
 - * 5-3/4 (147) for optional unit mounted switch box.

Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

LXF – SureFlow® Vertical Lowboy Cabinet



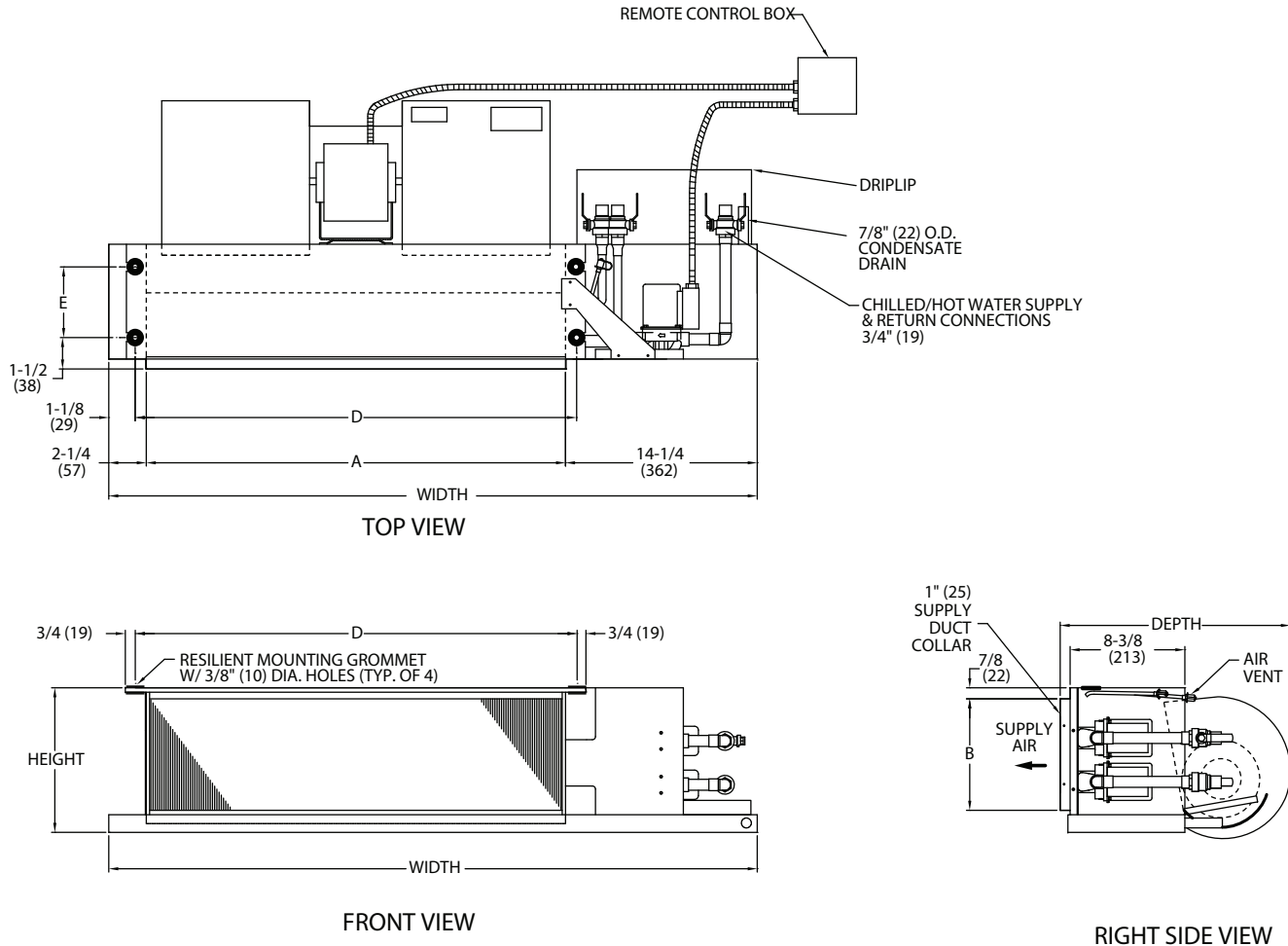
Size	Depth	Width	Height	Supply Air		Quantity/Unit	
				A	B	Blower	Motor
02	12-1/4 (311)	41 (1168)	16-3/8 (416)	6 (152)	17-1/8 (435)	2	1
03	12-1/4 (311)	51 (1295)	16-3/8 (416)	6 (152)	21-1/2 (546)	2	1
04	12-1/4 (311)	59 (1505)	16-3/8 (416)	6 (152)	30-1/4 (768)	2	1
06	12-1/4 (311)	73 (1862)	16-3/8 (416)	6 (152)	43 (1102)	4	2

- NOTES:**
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 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - RH shown, LH opposite.
 - Addition of electric heat does not alter cabinet dimensions.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

CHF-1 – SureFlow® Horizontal Hideaway



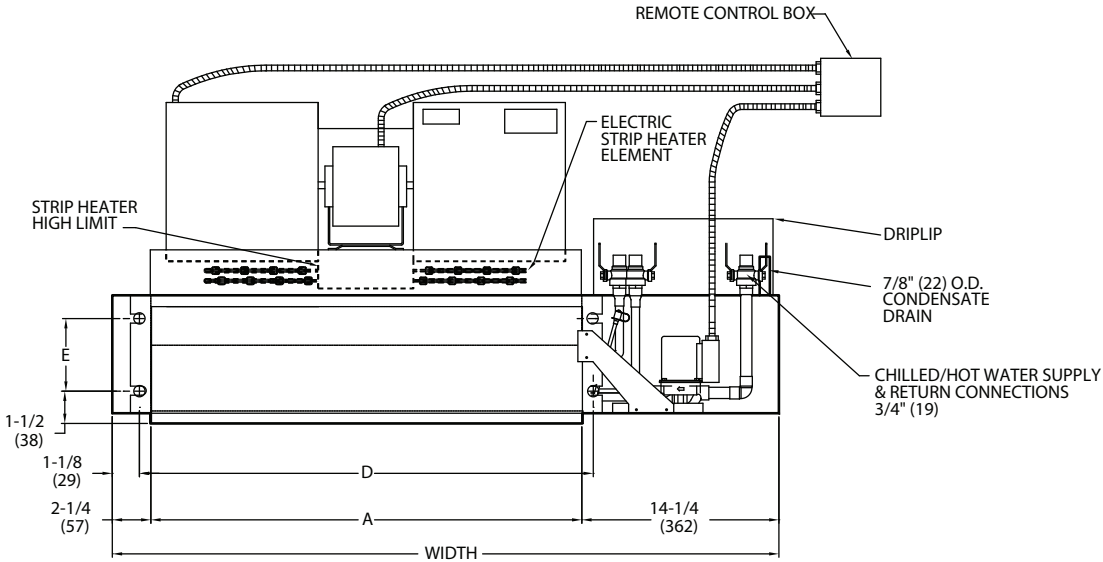
Size	Depth	Width	Height	Supply Air		Mounting Holes	
				A	B	D	E
02	17-1/2 (445)	32-1/2 (826)	8-3/4 (222)	16 (406)	6-1/4 (159)	18-1/4 (464)	6 (152)
03	17-1/2 (445)	36-1/2 (927)	8-3/4 (222)	20 (508)	6-1/4 (159)	22-1/4 (565)	6 (152)
04	17-1/2 (445)	42-1/2 (1080)	8-3/4 (222)	26 (660)	6-1/4 (159)	28-1/4 (718)	6 (152)
06	17-1/2 (445)	47-1/2 (1207)	10 (254)	31 (787)	7-1/2 (191)	33-1/4 (845t)	6 (152)
08	17-1/2 (445)	54-1/2 (1384)	10 (254)	38 (965)	7-1/2 (191)	40-1/4 (1022)	6 (152)
10	17-1/2 (445)	68-1/2 (1740)	10 (254)	52 (1321)	7-1/2 (191)	54-1/4 (1378)	6 (152)
12	17-1/2 (445)	76-1/2 (1943)	10 (254)	60 (1524)	7-1/2 (191)	62-1/4 (1581)	6 (152)

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

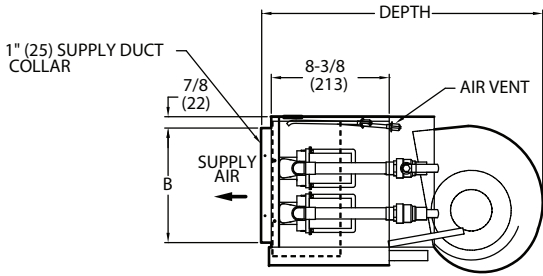
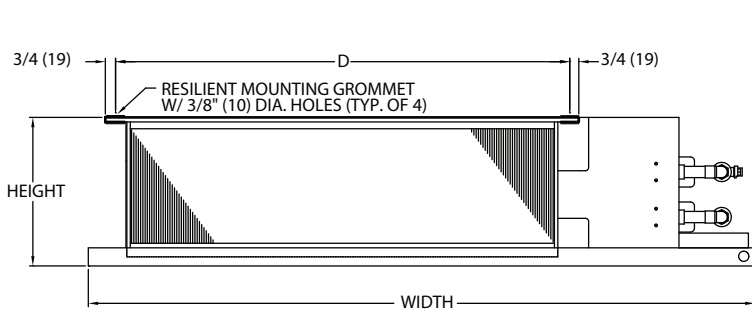
**Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.**

Submittal Data, Cont'd.

CHF-2 – SureFlow® Horizontal Hideaway w/Electric Heat



TOP VIEW



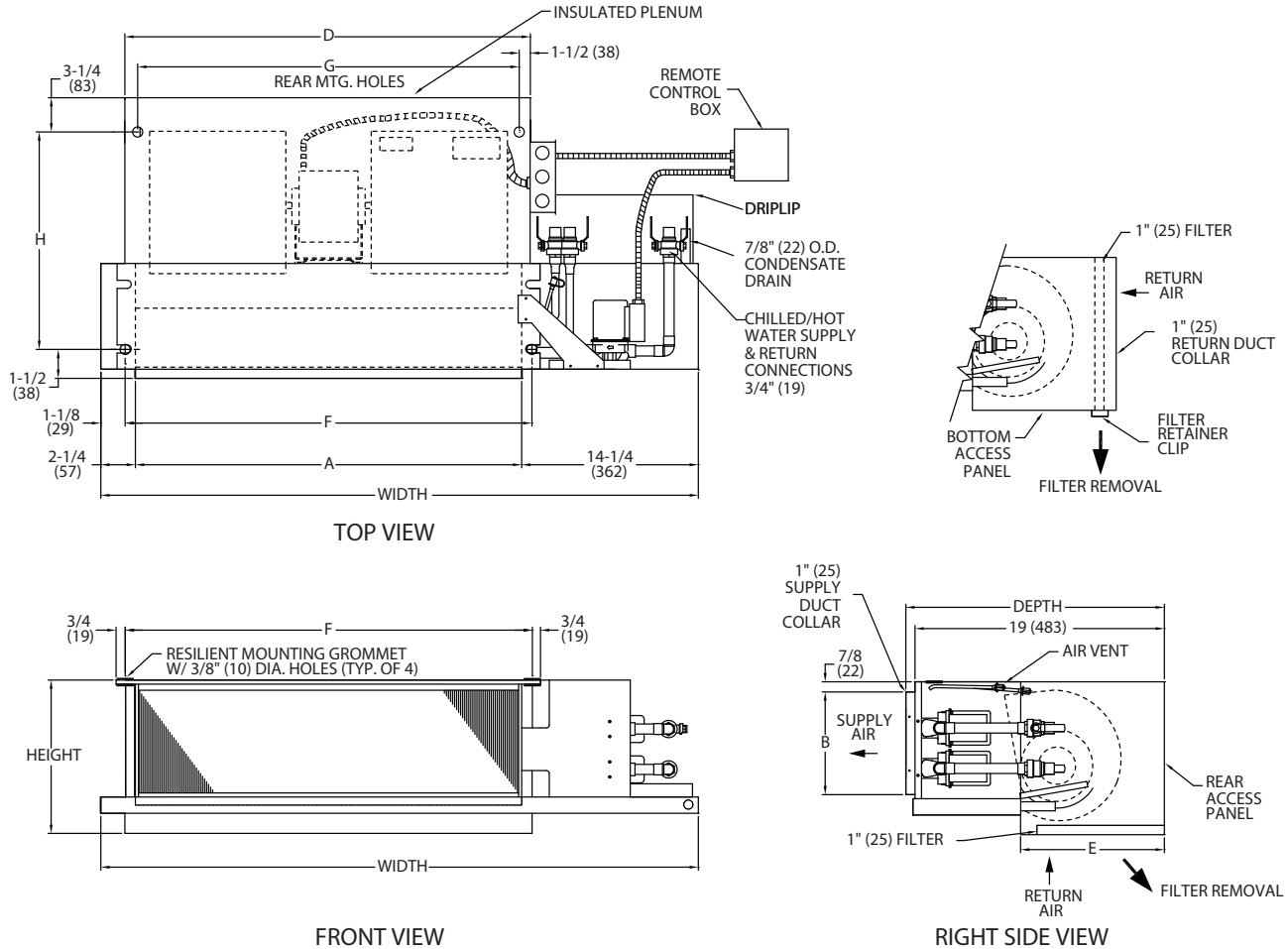
Size	Depth	Width	Height	Supply Duct		Mounting Holes	
				A	B	D	E
02	21-1/2 (546)	32-1/2 (826)	8-3/4 (222)	16 (406)	6-1/4 (159)	18-1/4 (464)	6 (152)
03	21-1/2 (546)	36-1/2 (927)	8-3/4 (222)	20 (508)	6-1/4 (159)	22-1/4 (565)	6 (152)
04	21-1/2 (546)	42-1/2 (1080)	8-3/4 (222)	26 (660)	6-1/4 (159)	28-1/4 (718)	6 (152)
06	21-1/2 (546)	47-1/2 (1207)	10 (254)	31 (787)	7-1/2 (191)	33-1/4 (845)	6 (152)
08	21-1/2 (546)	54-1/2 (1384)	10 (254)	38 (965)	7-1/2 (191)	40-1/4 (1022)	6 (152)
10	21-1/2 (546)	68-1/2 (1740)	10 (254)	52 (1321)	7-1/2 (191)	54-1/4 (1378)	6 (152)
12	21-1/2 (546)	76-1/2 (1943)	10 (254)	60 (1524)	7-1/2 (191)	62-1/4 (1581)	6 (152)

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

**Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.**

Submittal Data, Cont'd.

CPF-1 – SureFlow® Horizontal Hideaway w/Plenum



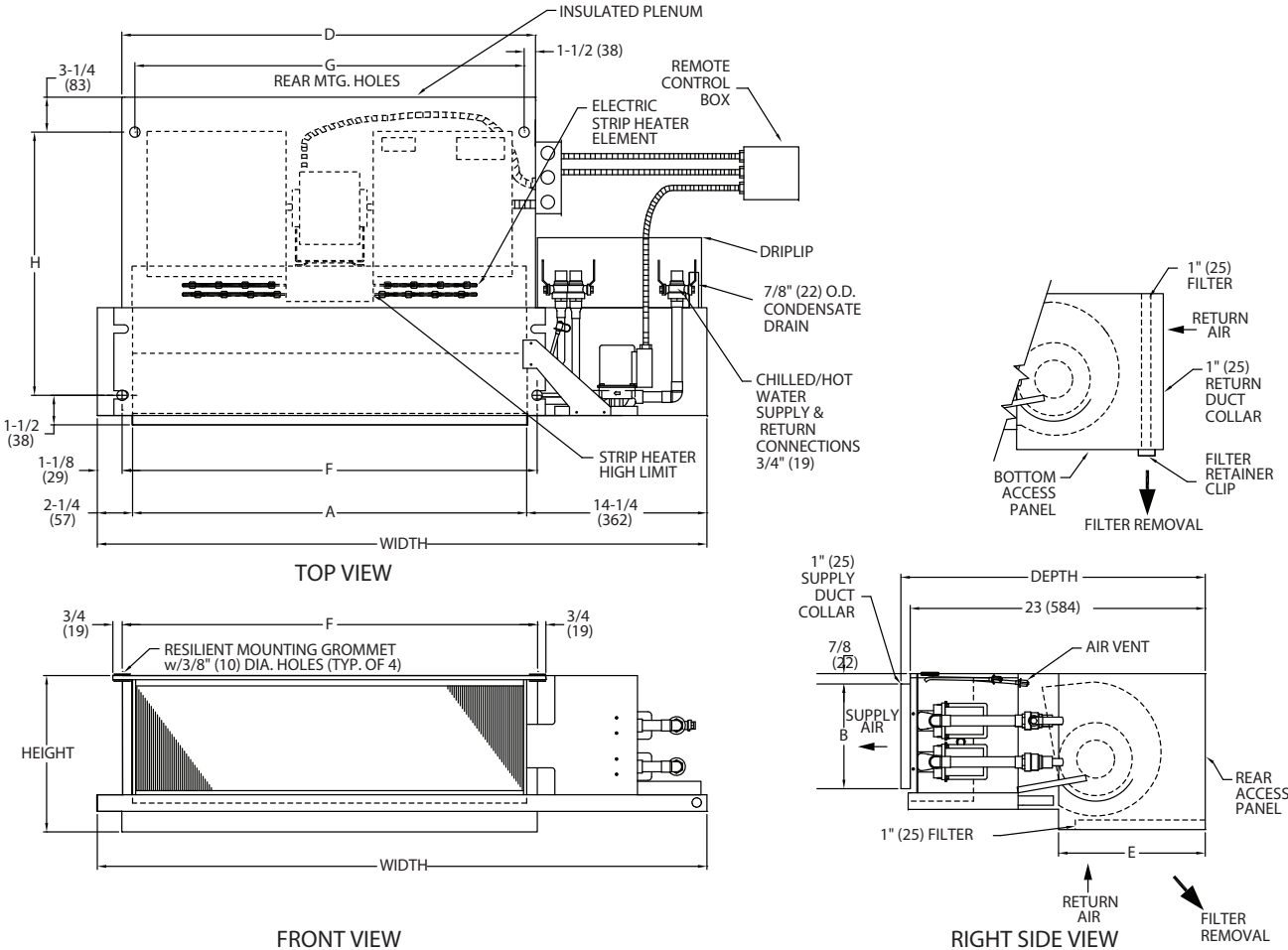
Size	Depth	Width	Height	Supply Duct		Return Duct		Mounting Holes		
				A	B	D	E	F	G	H
02	20 (508)	32-1/2 (826)	10-1/2 (267)	16 (406)	6-1/4 (159)	18-1/4 (464)	6 (152)	18-1/4 (464)	15-3/8 (389)	15-1/4 (387)
03	20 (508)	36-1/2 (927)	10-1/2 (267)	20 (508)	6-1/4 (159)	22-1/4 (565)	6 (152)	22-1/4 (565)	19-3/8 (491)	15-1/4 (387)
04	20 (508)	42-1/2 (1080)	10-1/2 (267)	26 (660)	6-1/4 (159)	28-1/4 (718)	6 (152)	28-1/4 (718)	25-3/8 (643)	15-1/4 (387)
06	20 (508)	47-1/2 (1207)	10-1/2 (267)	31 (787)	7-1/2 (191)	33-1/4 (845)	6 (152)	33-1/4 (845)	30-3/8 (770)	15-1/4 (387)
08	20 (508)	54-1/2 (1384)	10-1/2 (267)	38 (965)	7-1/2 (191)	40-1/4 (1022)	6 (152)	40-1/4 (1022)	37-3/8 (948)	15-1/4 (387)
10	20 (508)	68-1/2 (1740)	10-1/2 (267)	52 (1321)	7-1/2 (191)	54-1/4 (1378)	6 (152)	54-1/4 (1378)	51-3/8 (1304)	15-1/4 (387)
12	20 (508)	76-1/2 (1943)	10-1/2 (267)	60 (1524)	7-1/2 (191)	62-1/4 (1581)	6 (152)	62-1/4 (1581)	59-3/8 (1507)	15-1/4 (387)

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

CPF-2 – SureFlow® Horizontal Hideaway w/Plenum and Electric Heat



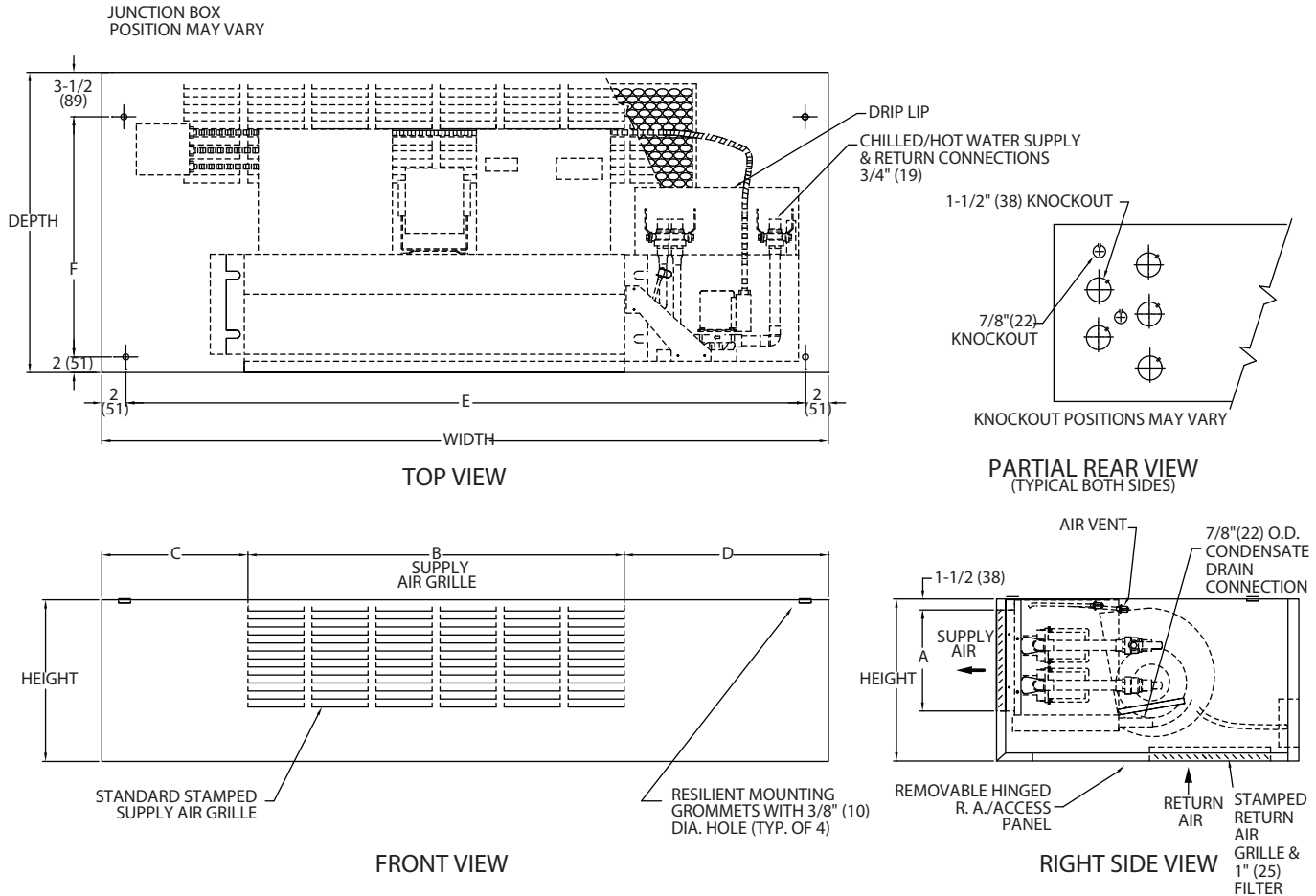
Size	Depth	Width	Height	Supply Duct		Return Duct		Mounting Holes		
				A	B	D	E	F	G	H
02	24 (610)	32-1/2 (826)	10-1/2 (267)	16 (406)	6-1/4 (159)	18-1/4 (464)	10-1/2 (267)	18-1/4 (464)	15-3/8 (389)	19-1/4 (489)
03	24 (610)	36-1/2 (927)	10-1/2 (267)	20 (508)	6-1/4 (159)	22-1/4 (565)	10-1/2 (267)	22-1/4 (565)	19-3/8 (491)	19-1/4 (489)
04	24 (610)	42-1/2 (1080)	10-1/2 (267)	26 (660)	6-1/4 (159)	28-1/4 (718)	10-1/2 (267)	28-1/4 (718)	25-3/8 (643)	19-1/4 (489)
06	24 (610)	47-1/2 (1207)	10-1/2 (267)	31 (787)	7-1/2 (191)	33-1/4 (845)	10-1/2 (267)	33-1/4 (845)	30-3/8 (770)	19-1/4 (489)
08	24 (610)	54-1/2 (1384)	10-1/2 (267)	38 (965)	7-1/2 (191)	40-1/4 (1022)	10-1/2 (267)	40-1/4 (1022)	37-3/8 (948)	19-1/4 (489)
10	24 (610)	68-1/2 (1740)	10-1/2 (267)	52 (1321)	7-1/2 (191)	54-1/4 (1378)	10-1/2 (267)	54-1/4 (1378)	51-3/8 (1304)	19-1/4 (489)
12	24 (610)	76-1/2 (1943)	10-1/2 (267)	60 (1524)	7-1/2 (191)	62-1/4 (1581)	10-1/2 (267)	62-1/4 (1581)	59-3/8 (1507)	19-1/4 (489)

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

CXF – SureFlow® Horizontal Cabinet



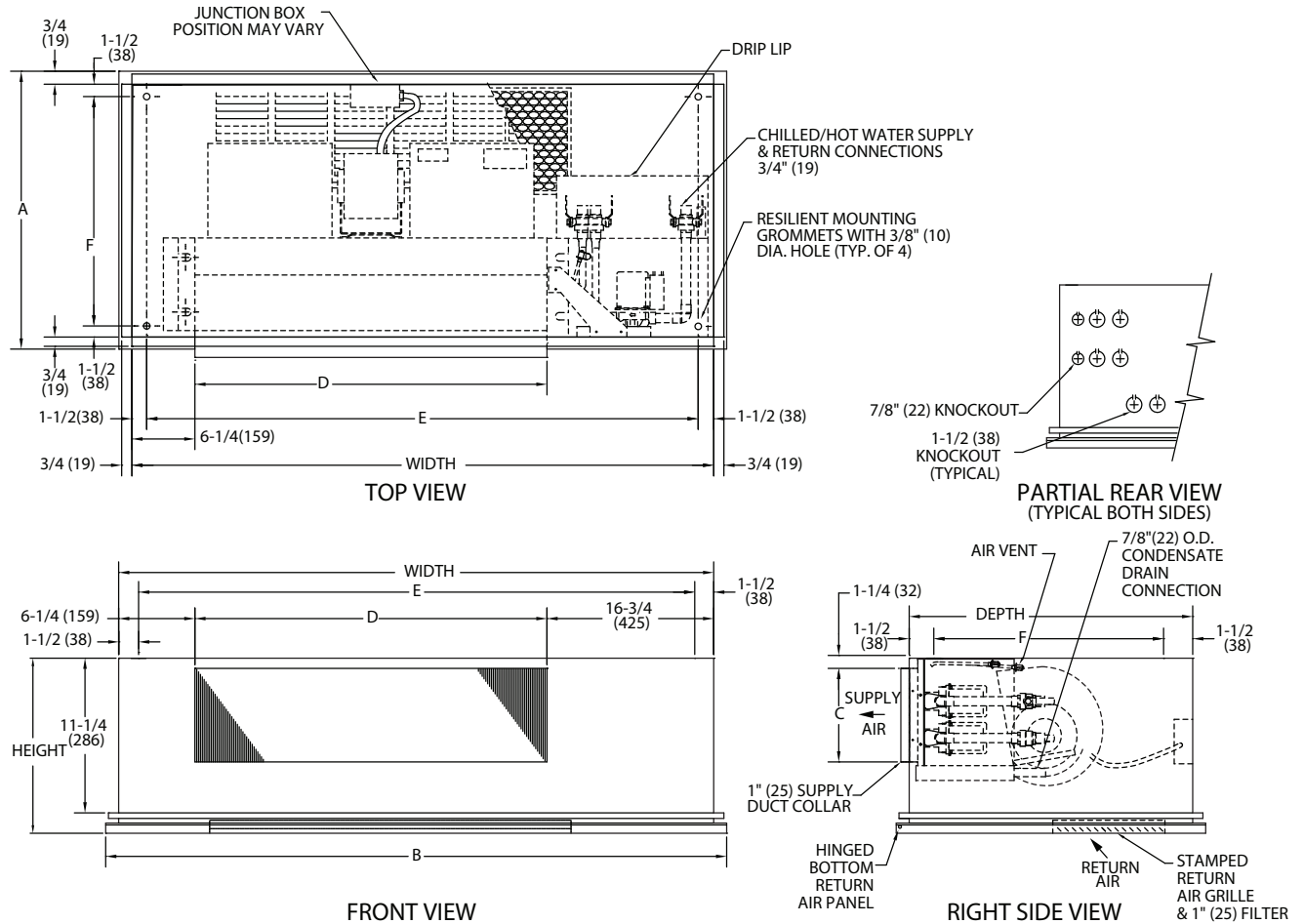
Size	Depth	Width	Height	Supply Duct		Mounting Holes		Side Compartments	
				A	B	E	F	C	D
02	23-1/2 (597)	44 (1118)	11 (279)	5-3/4 (146)	17-1/8 (435)	40 (1016)	18 (457)	10-7/16 (265)	16-7/16 (418)
03	23-1/2 (597)	48 (1219)	11 (279)	5-3/4 (146)	21-1/2 (546)	44 (1118)	18 (457)	10-1/4 (260)	16-1/4 (413)
04	23-1/2 (597)	54 (1372)	11 (279)	5-3/4 (146)	25-7/8 (657)	50 (1270)	18 (457)	11-1/16 (281)	17-1/16 (433)
06	23-1/2 (597)	59 (1499)	12 (305)	6-3/4 (171)	34-5/8 (879)	55 (1397)	18 (457)	9-3/16 (233)	15-3/16 (386)
08	23-1/2 (597)	66 (1676)	12 (305)	6-3/4 (171)	39 (991)	62 (1575)	18 (457)	10-1/2 (267)	16-1/2 (419)
10	23-1/2 (597)	80 (2032)	12 (305)	6-3/4 (171)	52-1/8 (1324)	76 (1930)	18 (457)	10-15/16 (278)	16-15/16 (430)
12	23-1/2 (597)	88 (2235)	12 (305)	6-3/4 (171)	60-7/8 (1546)	84 (2134)	18 (457)	10-9/16 (268)	16-9/16 (421)

- NOTES:
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - Dimensions may vary for optional electric heat models. Consult factory for submittal drawings.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only. Dimensions may vary with options ordered. Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

CBF – SureFlow® Horizontal Telescoping Hideaway



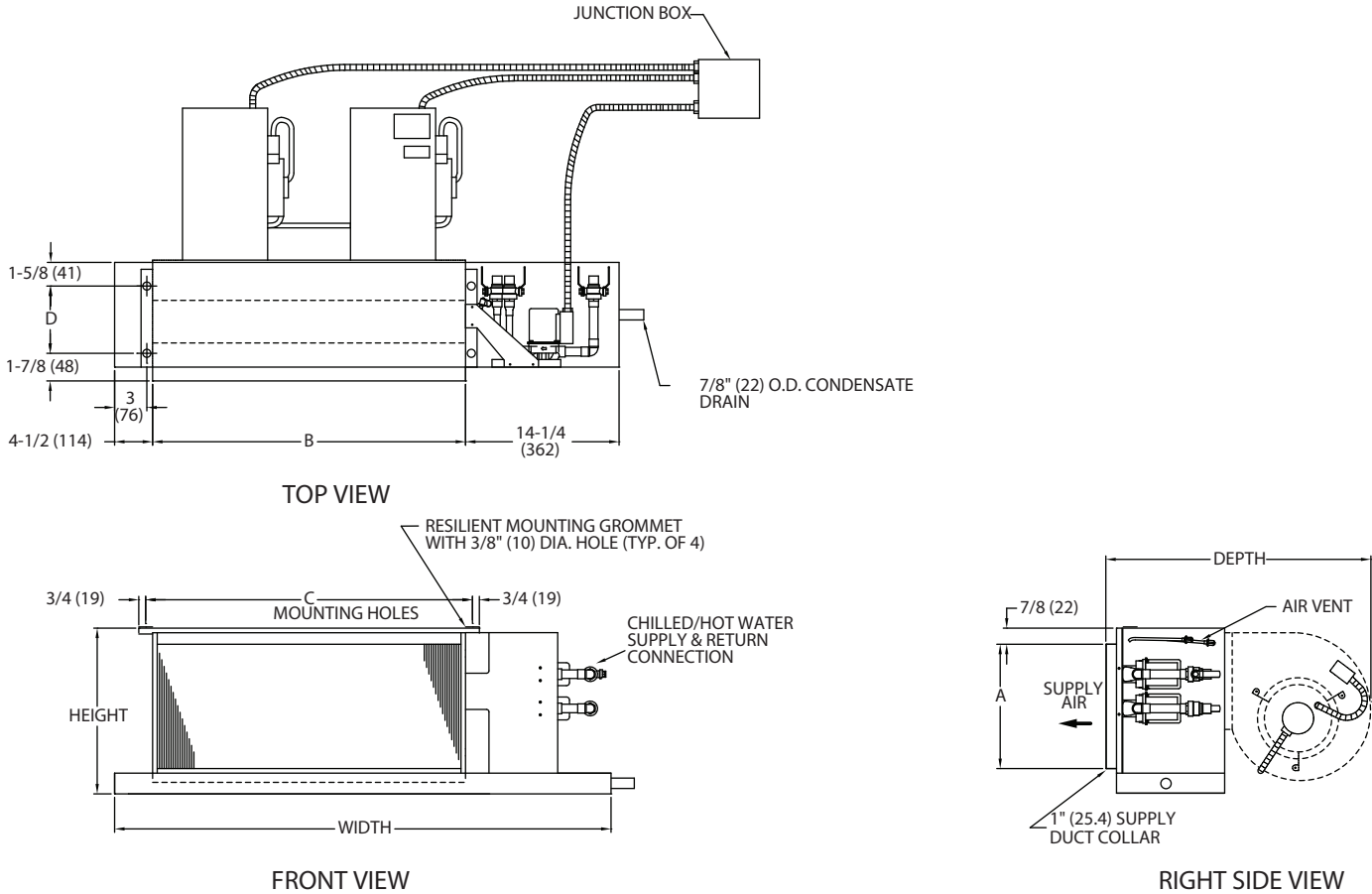
Size	Depth	Width	Height	Supply Duct		Supply Duct		Side Compartments	
				A	B	C	D	E	F
02	23-1/4 (591)	39 (991)	12-14 (305-356)	26 (660)	40 (1016)	6 (152)	16 (406)	35-1/2 (902)	20-3/4 (527)
03	23-1/4 (591)	43 (1092)	12-14 (305-356)	26 (660)	44 (1118)	6 (152)	20 (508)	39-1/2 (1003)	20-3/4 (527)
04	23-1/4 (591)	49 (1245)	12-14 (305-356)	26 (660)	50 (1270)	6 (152)	26 (660)	45-1/2 (1156)	20-3/4 (527)
06	23-1/4 (591)	54 (1372)	12-14 (305-356)	26 (660)	55 (1397)	7 (178)	31 (787)	50-1/2 (1283)	20-3/4 (527)
08	23-1/4 (591)	61 (1549)	12-14 (305-356)	26 (660)	62 (1575)	7 (178)	38 (965)	57-1/2 (1461)	20-3/4 (527)
10	23-1/4 (591)	75 (1905)	12-14 (305-356)	26 (660)	76 (1930)	7 (178)	52 (1321)	71-1/2 (1861)	20-3/4 (527)
12	23-1/4 (591)	83 (2108)	12-14 (305-356)	26 (660)	84 (2134)	7 (178)	60 (1524)	79-1/2 (2019)	20-3/4 (527)

- NOTES:**
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 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - Dimensions may vary for optional electric heat models. Consult factory for submittal drawings.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

HHF – SureFlow® Hi-Performance Hideaway



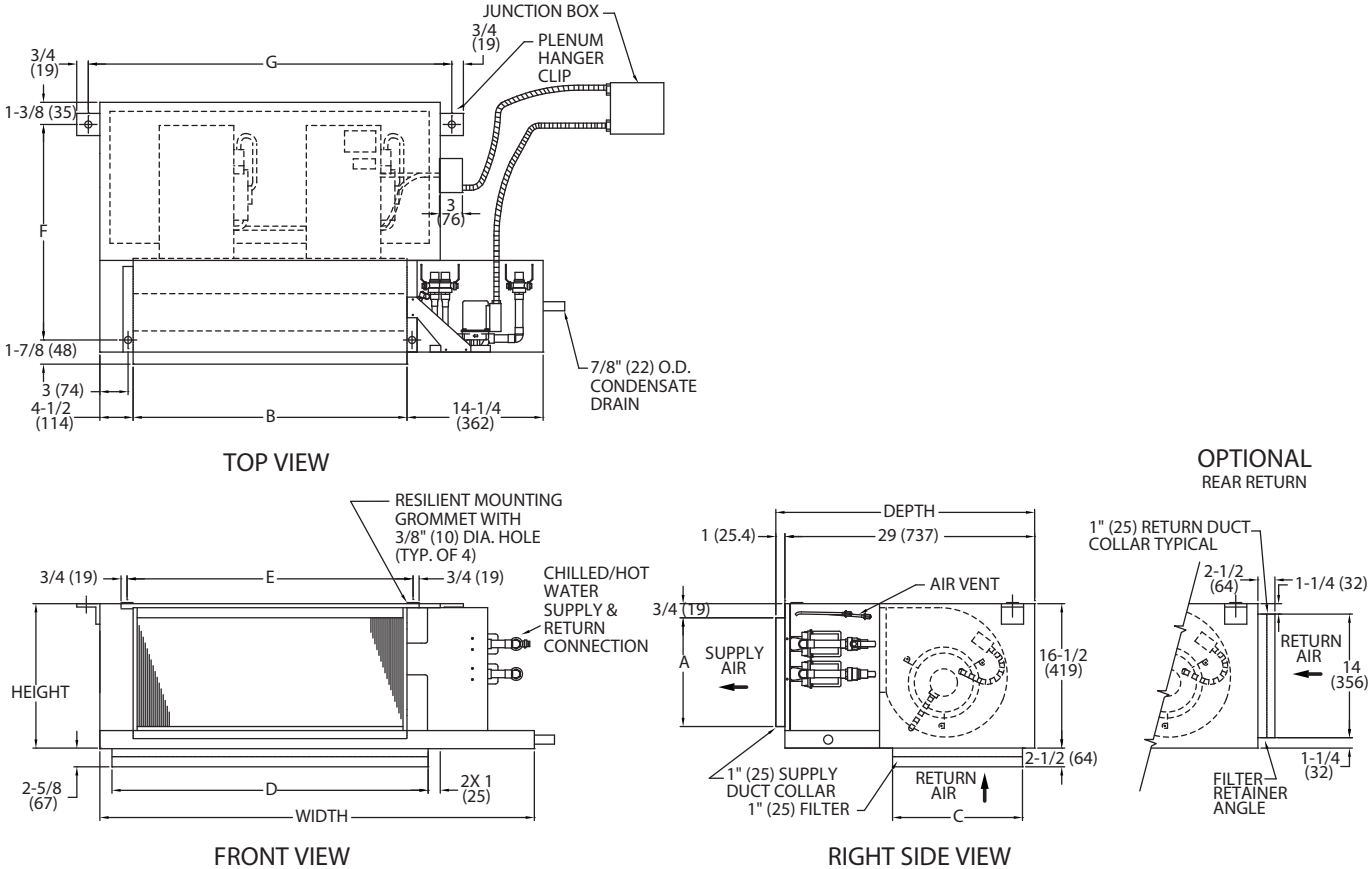
Size	Depth	Width	Height	Supply Air		Mounting Holes	
				A	B	D	E
06	27-1/2 (699)	32-3/4 (826)	16-3/8 (416)	13-1/2 (343)	14 (356)	17 (432)	9 (229)
08	27-1/2 (699)	37-3/4 (959)	16-3/8 (416)	13-1/2 (343)	19 (483)	22 (559)	9 (229)
10	27-1/2 (699)	41-3/4 (1060)	16-3/8 (416)	13-1/2 (343)	23 (584)	26 (660)	9 (229)
12	27-1/2 (699)	46-3/4 (1187)	16-3/8 (416)	13-1/2 (343)	28 (711)	31 (787)	9 (229)
14	27-1/2 (699)	51-3/4 (1314)	16-3/8 (416)	13-1/2 (343)	33 (838)	36 (914)	9 (229)
16	27-1/2 (699)	56-3/4 (1441)	16-3/8 (416)	13-1/2 (343)	38 (965)	41 (1041)	9 (229)
18	27-1/2 (699)	61-3/4 (1568)	16-3/8 (416)	13-1/2 (343)	43 (1092)	46 (1168)	9 (229)
20	27-1/2 (699)	65-3/4 (1670)	16-3/8 (416)	13-1/2 (343)	47 (1194)	50 (1270)	9 (229)

- NOTES:**
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 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - Addition of electric heat does not alter cabinet dimensions.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

**Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.**

Submittal Data, Cont'd.

HPF – SureFlow® Hi-Performance Hideaway with Plenum



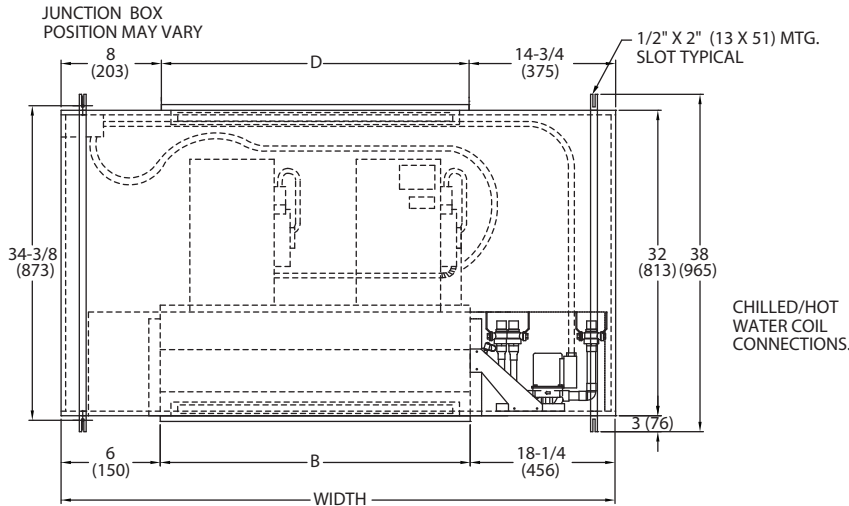
Size	Depth	Width	Height	Supply Air		Return Air		Mounting Holes		
				A	B	C	D	E	F	G
06	29-1/2 (749)	32-3/4 (826)	16-3/8 (416)	13-1/2 (343)	14 (356)	14 (356)	21 (533)	17 (432)	26-1/4 (667)	25-1/2 (648)
08	29-1/2 (749)	37-3/4 (959)	16-3/8 (416)	13-1/2 (343)	19 (483)	14 (356)	26 (660)	22 (559)	26-1/4 (667)	30-1/2 (775)
10	29-1/2 (749)	41-3/4 (1060)	16-3/8 (416)	13-1/2 (343)	23 (584)	14 (356)	30 (762)	26 (660)	26-1/4 (667)	34-1/2 (876)
12	29-1/2 (749)	46-3/4 (1187)	16-3/8 (416)	13-1/2 (343)	28 (711)	14 (356)	35 (889)	31 (787)	26-1/4 (667)	39-1/2 (1003)
14	29-1/2 (749)	51-3/4 (1314)	16-3/8 (416)	13-1/2 (343)	33 (838)	14 (356)	40 (1016)	36 (914)	26-1/4 (667)	44-1/2 (1130)
16	29-1/2 (749)	56-3/4 (1441)	16-3/8 (416)	13-1/2 (343)	38 (965)	14 (356)	45 (1143)	41 (1041)	26-1/4 (667)	49-1/2 (1257)
18	29-1/2 (749)	61-3/4 (1568)	16-3/8 (416)	13-1/2 (343)	43 (1092)	14 (356)	50 (1270)	46 (1168)	26-1/4 (667)	54-1/2 (1384)
20	29-1/2 (749)	65-3/4 (1670)	16-3/8 (416)	13-1/2 (343)	47 (1194)	14 (356)	54 (1372)	50 (1270)	26-1/4 (667)	58-1/2 (1486)

- NOTES:**
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 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - When unit is used with bottom return configuration, add 2-1/2" to depth of the unit.
 - Addition of electric heat does not alter cabinet dimensions.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

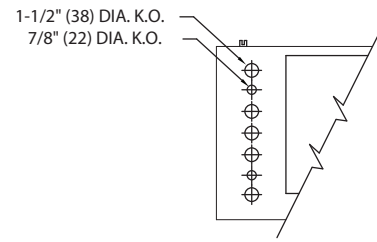
**Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.**

Submittal Data, Cont'd.

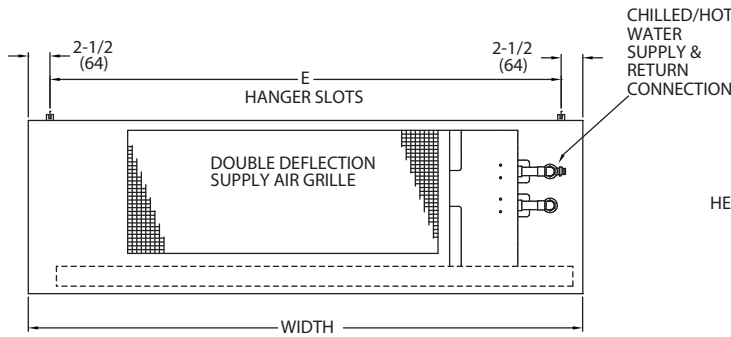
HLF – SureFlow® Hi-Performance Cabinet, Low Static



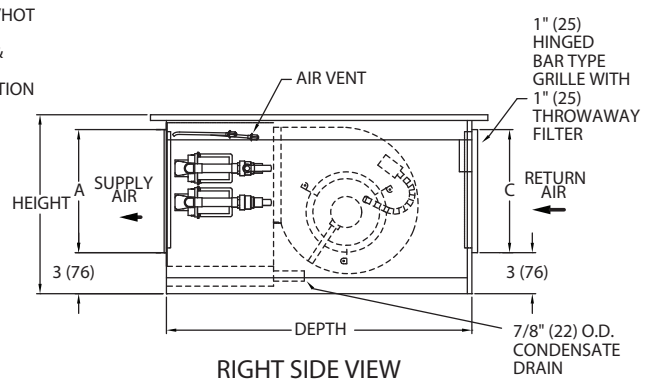
TOP VIEW



PARTIAL REAR VIEW (TYP. BOTH SIDES)



FRONT VIEW



RIGHT SIDE VIEW

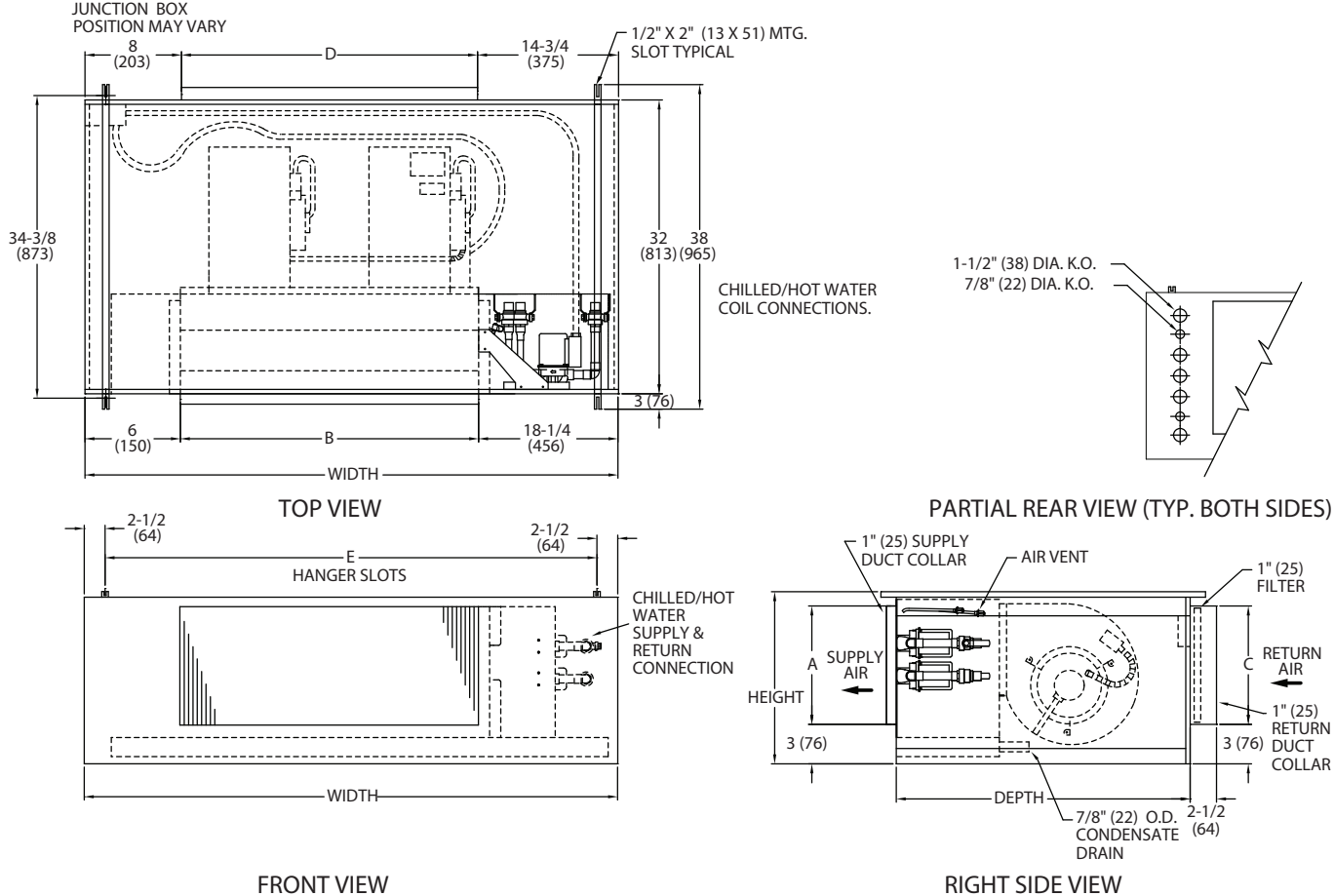
Size	Depth	Width	Height	Supply Duct		Return Air		Hanger Slots
				A	B	C	D	E
06	32 (813)	38-1/2 (978)	18-7/8 (479)	14 (356)	14-1/4 (368)	14 (356)	15-1/2 (394)	33-1/2 (851)
08	32 (813)	43-1/2 (1105)	18-7/8 (479)	14 (356)	19-1/4 (495)	14 (356)	20-1/2 (521)	38-1/2 (978)
10	32 (813)	47-1/2 (1207)	18-7/8 (479)	14 (356)	23-1/4 (597)	14 (356)	24-1/2 (622)	42-1/2 (1080)
12	32 (813)	52-1/2 (1333)	18-7/8 (479)	14 (356)	28-1/4 (724)	14 (356)	29-1/2 (749)	47-1/2 (1207)
14	32 (813)	57-1/2 (1461)	18-7/8 (479)	14 (356)	33-1/4 (851)	14 (356)	34-1/2 (876)	52-1/2 (1333)
16	32 (813)	62-1/2 (1588)	18-7/8 (479)	14 (356)	38-1/4 (978)	14 (356)	39-1/2 (1003)	57-1/2 (1461)
18	32 (813)	67-1/2 (1715)	18-7/8 (479)	14 (356)	43-1/4 (1105)	14 (356)	44-1/2 (1130)	62-1/2 (1588)
20	32 (813)	71-1/2 (1816)	18-7/8 (479)	14 (356)	47-1/4 (1207)	14 (356)	48-1/2 (1232)	66-1/2 (1689)

- NOTES: 1. Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 2. All dimension are +/- 1/4" (6).
 3. Dimensions in () are millimeters.
 4. Junction box size may vary.
 5. RH shown, LH opposite.
 6. All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

**Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.**

Submittal Data, Cont'd.

HXF – SureFlow® Hi-Performance Horizontal Cased



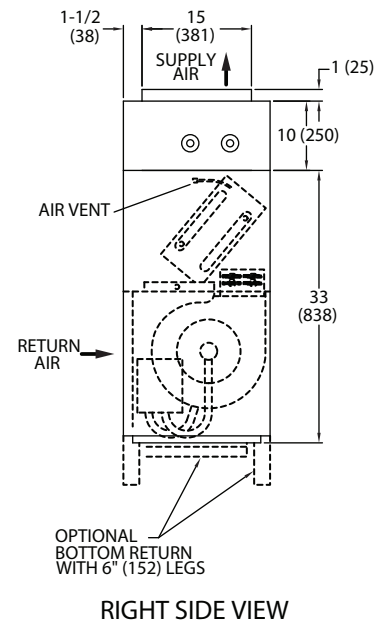
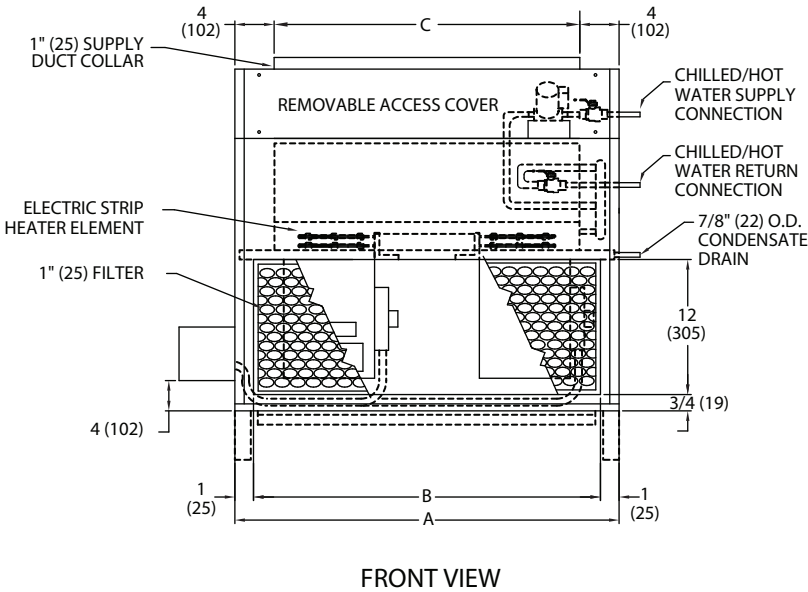
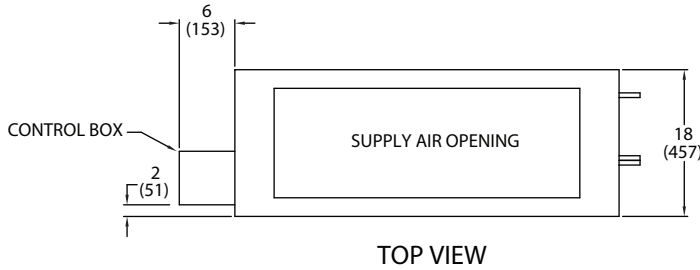
Size	Depth	Width	Height	Supply Duct		Return Air		Hanger Slots
				A	B	C	D	E
06	32 (813)	38-1/2 (978)	18-7/8 (479)	14 (356)	14-1/4 (368)	14 (356)	15-1/2 (394)	33-1/2 (851)
08	32 (813)	43-1/2 (1105)	18-7/8 (479)	14 (356)	19-1/4 (495)	14 (356)	20-1/2 (521)	38-1/2 (978)
10	32 (813)	47-1/2 (1207)	18-7/8 (479)	14 (356)	23-1/4 (597)	14 (356)	24-1/2 (622)	42-1/2 (1080)
12	32 (813)	52-1/2 (1333)	18-7/8 (479)	14 (356)	28-1/4 (724)	14 (356)	29-1/2 (749)	47-1/2 (1207)
14	32 (813)	57-1/2 (1461)	18-7/8 (479)	14 (356)	33-1/4 (851)	14 (356)	34-1/2 (876)	52-1/2 (1333)
16	32 (813)	62-1/2 (1588)	18-7/8 (479)	14 (356)	38-1/4 (978)	14 (356)	39-1/2 (1003)	57-1/2 (1461)
18	32 (813)	67-1/2 (1715)	18-7/8 (479)	14 (356)	43-1/4 (1105)	14 (356)	44-1/2 (1130)	62-1/2 (1588)
20	32 (813)	71-1/2 (1816)	18-7/8 (479)	14 (356)	47-1/4 (1207)	14 (356)	48-1/2 (1232)	66-1/2 (1689)

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

**Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.**

Submittal Data, Cont'd.

VEF – SureFlow® Hi-Performance Vertical Cased with Electric Heat



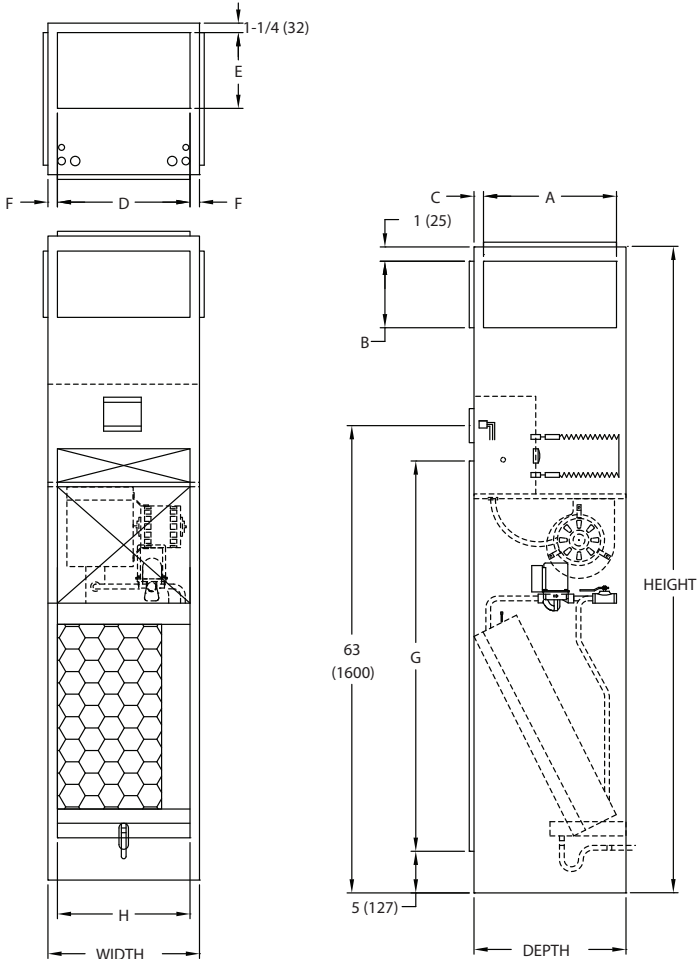
Size	Dimensions – Inches (Millimeters)			Quantity/Unit	
	A	B	C	Blower	Motor
06	23 (584)	21 (533)	15 (381)	1	1
08	28 (711)	26 (660)	20 (508)	1	1
10	32 (813)	30 (762)	24 (610)	1	1
12	37 (940)	35 (889)	29 (737)	2	2
14	42 (1067)	40 (1016)	34 (864)	2	2
16	47 (1194)	45 (1143)	39 (991)	2	2
18	52 (1321)	50 (1270)	44 (1118)	2	2
20	56 (1422)	54 (1372)	48 (1220)	2	2

- NOTES:**
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 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - Junction box size may vary.
 - RH shown, LH opposite.
 - All unit supply/return water connections are 3/4" (19) nominal {7/8" (22) O.D.} See page 65.

Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

MPF – SureFlow® Modular Hi-Rise Unit



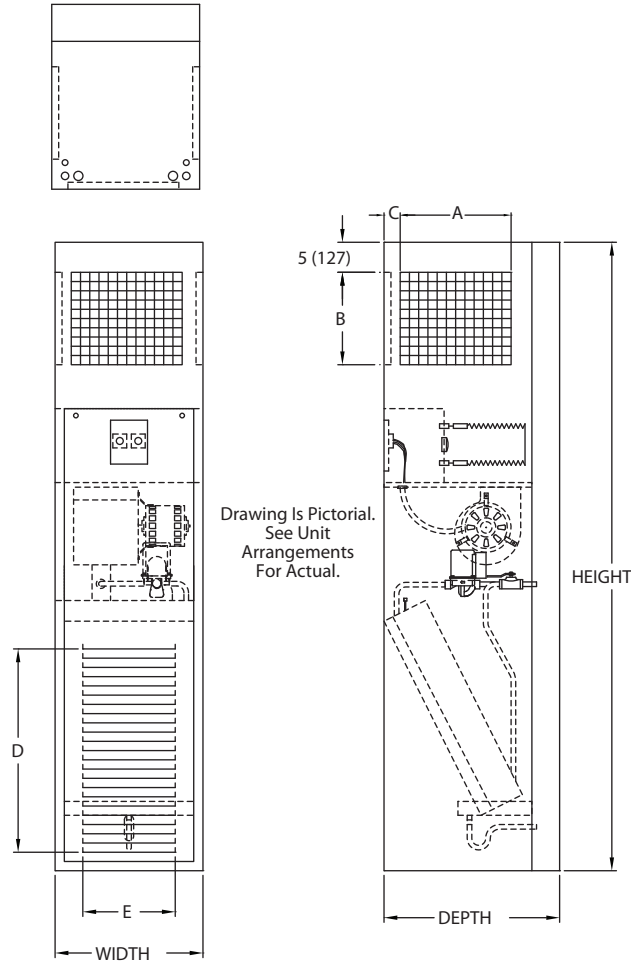
Size	Depth	Width	Height	Supply									Return Panel	
				Single Grille		Double Grille		C	Top Duct		F	G	H	
				A	B	A	B		D	E				
03	17 (432)	17 (432)	88 (2235)	14 (356)	8 (203)	14 (356)	6 (152)	1-1/2 (38)	14 (356)	10 (250)	1-1/2 (38)	14 (356)	54 (1372)	
04	17 (432)	17 (432)	88 (2235)	14 (356)	12 (305)	14 (356)	6 (152)	1-1/2 (38)	14 (356)	10 (250)	1-1/2 (38)	14 (356)	54 (1372)	
06	20 (508)	20 (508)	88 (2235)	18 (457)	10 (250)	18 (457)	6 (152)	1 (25)	16 (406)	12 (305)	2 (51)	18 (457)	54 (1372)	
08	20 (508)	20 (508)	88 (2235)	18 (457)	12 (305)	18 (457)	6 (152)	1 (25)	16 (406)	12 (305)	2 (51)	18 (457)	54 (1372)	
10	24 (610)	24 (610)	88 (2235)	22 (559)	16 (406)	22 (559)	8 (203)	1 (25)	18 (457)	16 (406)	3 (76)	22 (559)	54 (1372)	
12	24 (610)	24 (610)	88 (2235)	22 (559)	16 (406)	22 (559)	8 (203)	1 (25)	18 (457)	16 (406)	3 (76)	22 (559)	54 (1372)	

- NOTES:**
- Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 - All dimension are +/- 1/4" (6).
 - Dimensions in () are millimeters.
 - When two MPF units are used in the MAF/MBF configuration, add 6-1/2" to the depth of the two units for the riser chase.

Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.

Submittal Data, Cont'd.

MXF – SureFlow® Modular Hi-Rise Cabinet Unit



Size	Depth	Width	Height	Supply					Return Panel	
				Single Grille		Double Grille		C	D	E
				A	B	A	B			
03	22-3/8 (568)	17 (432)	88 (2235)	14 (356)	8 (203)	14 (356)	6 (152)	1-1/2 (38)	22-1/8 (562)	14-3/4 (375)
04	22-3/8 (568)	17 (432)	88 (2235)	14 (356)	12 (305)	14 (356)	8 (203)	1-1/2 (38)	22-1/8 (562)	14-3/4 (375)
06	25-3/8 (645)	20 (508)	88 (2235)	14 (356)	12 (305)	14 (356)	8 (203)	1 (25)	26-5/8 (676)	17-3/4 (451)
08	25-3/8 (645)	20 (508)	88 (2235)	14 (356)	12 (305)	14 (356)	10 (254)	1 (25)	26-5/8 (676)	17-3/4 (451)
10	29-3/8 (746)	24 (610)	88 (2235)	18 (457)	16 (406)	14 (356)	12 (305)	1 (25)	31-1/8 (791)	17-3/4 (451)
12	29-3/8 (746)	24 (610)	88 (2235)	18 (457)	16 (406)	14 (356)	12 (305)	1 (25)	31-1/8 (791)	17-3/4 (451)

- NOTES:** 1. Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
 2. All dimension are +/- 1/4" (6).
 3. Dimensions in () are millimeters.

Drawing is provided for reference only.
 Dimensions may vary with options ordered.
 Consult IEC website for submittal drawings.

Weights

Shipping Weight Calculations

Unit Series	Unit Weight	02	03	04	06	08	10	12	14	16	18	20	
Vertical Series	FHF 2-Pipe	71	86	96	118	121	146	176	–	–	–	–	
	FHF 4-Pipe	77	92	102	124	127	152	182	–	–	–	–	
	FXF 2-Pipe	95	101	112	140	143	175	198	–	–	–	–	
	FXF 4-Pipe	101	107	118	146	149	181	204	–	–	–	–	
	FSF 2-Pipe	98	104	128	150	150	184	211	–	–	–	–	
	FSF 4-Pipe	104	110	134	156	156	190	217	–	–	–	–	
	LHF 2-Pipe	58	69	82	121	–	–	–	–	–	–	–	–
	LHF 4-Pipe	64	75	88	127	–	–	–	–	–	–	–	–
	LXF 2-Pipe	82	112	122	170	–	–	–	–	–	–	–	–
	LXF 4-Pipe	88	118	128	176	–	–	–	–	–	–	–	–
Horizontal Series	CHF 2-Pipe	42	45	55	65	70	101	113	–	–	–	–	
	CHF 4-Pipe	48	51	61	71	76	107	119	–	–	–	–	
	CPF 2-Pipe	61	66	76	88	101	141	160	–	–	–	–	
	CPF 4-Pipe	67	72	82	94	107	147	166	–	–	–	–	
	CXF 2-Pipe	98	104	134	159	169	218	242	–	–	–	–	
	CXF 4-Pipe	104	110	140	165	175	224	248	–	–	–	–	
	CBF 2-Pipe	121	126	141	156	161	233	247	–	–	–	–	
	CBF 4-Pipe	127	132	147	162	167	239	253	–	–	–	–	
Hi-Performance Series	HHF 2-Pipe	–	–	–	79	92	104	125	136	143	158	168	
	HHF 4-Pipe	–	–	–	85	98	110	131	142	149	164	174	
	HPF 2-Pipe	–	–	–	100	113	156	177	182	186	203	228	
	HPF 4-Pipe	–	–	–	106	119	162	183	188	192	209	234	
	HXF 2-Pipe	–	–	–	156	166	176	203	213	223	238	243	
	HXF 4-Pipe	–	–	–	162	172	182	209	219	229	244	249	
	HLF 2-Pipe	–	–	–	163	173	183	210	223	233	248	263	
	HLF 4-Pipe	–	–	–	169	179	189	216	229	239	254	269	
Modular Hi-Rise Series	MPF 2-Pipe	–	186	231	246	266	286	311	–	–	–	–	
	MPF 4-Pipe	–	192	237	252	272	292	317	–	–	–	–	
	MXF 2-Pipe	–	208	253	268	292	317	342	–	–	–	–	
	MXF 4-Pipe	–	214	259	274	298	323	348	–	–	–	–	

NOTES: Above are approximate shipping weights that might vary based on the number of coils and accessories selected. For approximate operating weights, calculate the weight of the water from the table below and add the weights to the shipping weight.

Unit Series	Unit Weight	02	03	04	06	08	10	12	14	16	18	20
Vertical Series	FHF, FXF, FSF	0.8	0.9	1.2	1.6	1.9	2.6	3.0	–	–	–	–
	LXF	1.1	1.3	1.8	2.5	–	–	–	–	–	–	–
Horizontal Series	CHF, CPF, CXF, CBF	0.8	0.9	1.2	1.6	1.9	2.6	3.0	–	–	–	–
Hi-Performance Series	HHF, HPF, HXF, HLF	–	–	–	1.6	2.0	2.3	2.8	3.1	3.5	4.0	4.3
Modular Hi-Rise Series	MPF, MXF	–	1.8	1.8	2.7	2.7	3.5	2.5	–	–	–	–

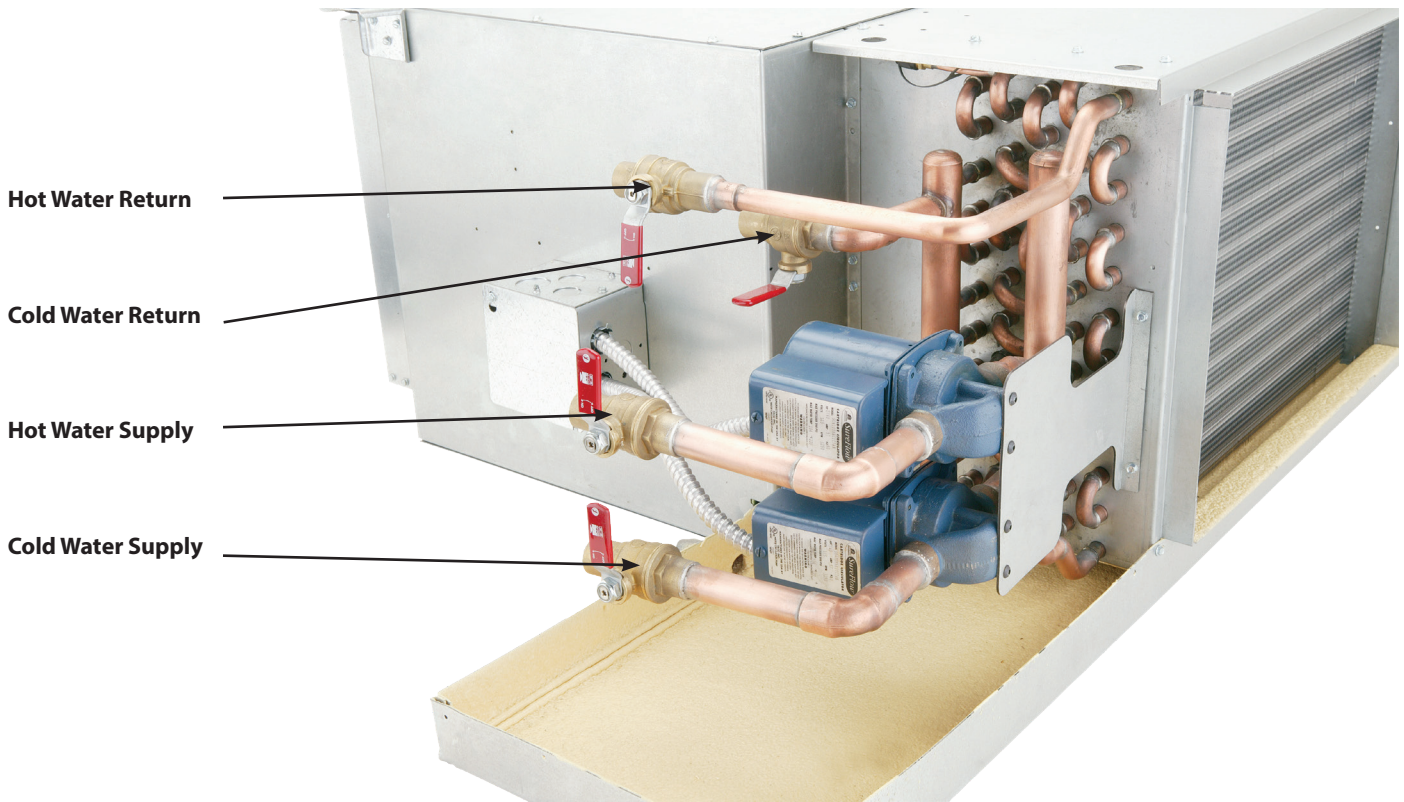
NOTES: Above weights are per row. Multiply the number of rows by the above weights and add it to the shipping weights from the table above to get to the operating weights.

Piping Connections

Water Supply Piping Connections

Unit Series	Unit Weight		02	03	04	06	08	10	12	14	16	18	20
Vertical Series	FHF, FXF, FSF, LHF, LXF	Supply	7/8" OD							-	-	-	-
		Return	7/8" OD							-	-	-	-
		Condensate	3/4" MPT Connection							-	-	-	-
Horizontal Series	CHF, CPF, CXF, CBF	Supply	7/8" OD							-	-	-	-
		Return	7/8" OD							-	-	-	-
		Condensate	7/8" OD							-	-	-	-
Hi-Performance Series	HHF, HPF, HXF, HLF	Supply	-	-	-	7/8" OD							
		Return	-	-	-	7/8" OD							
		Condensate	-	-	-	7/8" OD							
Modular Hi-Rise Series	MPF, MXF	Supply	-	7/8" OD						-	-	-	-
		Return	-	7/8" OD						-	-	-	-
		Condensate	-	7/8" OD						-	-	-	-

NOTES: 1. 5/8" OD equals 1/2" Nominal Pipe Size.
 2. 7/8" OD equals 3/4" Nominal Pipe Size.



Standard Features and Options for Vertical Series

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Air Flow Arrangement				
Front Return/Top Supply (FHF, FSF, FXF, LHF, LXF)	X			
Front Return/Front Supply (FHF, FXF, FSF)		X		
Front Return/Front Supply	X			
Coils				
2-Rows 2-Pipe (LHF, LXF)	X			
2-Rows 2-Pipe (FXF, FSF, FHF)		X		
3-Rows 2-Pipe	X			
3-Row 2-Pipe		X		
4-Rows 2-Pipe		X		
2/1-Rows 4-Pipe (LHF, LXF)		X		
3/1, 3/2, or 4/1-Rows (FXF, FSF, FHF)		X		
0.025" Tube Thickness				X
Manual Air Vent	X			
Automatic Air Vent		X		
DX Coils (F*F, L*F)		X		
Steam Coils (F*F, L*F)		X		X
Coil Test Pressure 350	X			
Coil Test Pressure 400, 450		X		
Copper Coils Fins (2, 3, 4, 5)		X		
Connection				
Right or Left (Same End)	X			
Drain				
Galvanized Internally Coated with a 2 part closed cell foam	X			
Stainless Steel Externally Coated		X		
Plastic Auxiliary Drain Pan	X			
Fin Material				
Aluminum w/Galvanized End Sheets	X			
Copper w/Stainless End Sheets & Bottom Coil Baffle		X		X
Sheath Type Electric Heater (Total and Auxiliary) (F*F, L*F)		X		
Indoor Air Quality				
1" Throwaway Non-woven Synthetic (F*F, L*F)	X			
1" Permanent (F*F, L*F)		X		
1" MERV 8 Pleated (F*F, L*F)		X		
Bipolar Ionizer (F*F, L*F)		X		
Insulation				
1/2" Standard Fiberglass	X			
1/2" Premium IAQ Fiberglass				X
1/2" Foil Face		X		
1/4" Closed Cell		X		

table continued on next page

Standard Features and Options for Vertical Series, Cont'd.

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Motor Type				
PSC Motors w/Quick Connect (F*F, L*F)	X			
ECM Motor w/Quick Connect (F*F, L*F)		X		
Shaded Pole	X			
Motor Voltage				
120/1/60 3-Speed	X			
208/230/277/1/60, 220/1/50 3-Speed		X		
Supply/Return Air Grilles				
Stamped Supply Grille (FXF, FSF, LXF)	X			
Stamped Return Grille (FXF, FSF)		X		
Stamped Return Grille	X			
Paint Options (FXF, FSF, LX*)				
Arctic White	X			
Special Color				X
Controls				
Service Switch with Lockout Tabs		X		
Single Point Power Connection		X		
Incoming Power Fusing (F*F, L*F)		X		
24V Controls (F*F, L*F)		X		
Line Voltage Controls (F*F, L*F)		X		
Condensate Float Switch		X		
Three Speed Switch		X		
Thermostats				
Unit Mounted (F*F, L*F)		X		
Remote Mounted			X	
Custom Controls (DDC)		X		X
Outside Air Dampers				
Manual Controlled Damper (FHF, FXF, FSF, LHF, LXF)		X		
Remote Controlled Damper (FHF, FXF, FSF)		X		
Motorized Controlled Damper (FHF, FXF, FSF)		X		
Outside Air Box (FHF, FXF, FSF)			X	
Decorative Wall Panels (FHF)			X	
Cabinet Options (Gray/bold) (F*F)				
1", 2.5" Leveling Legs		X		
16 gauge front access panel		X		
Stainless Steel Cabinet/Chassis		X		
Stainless Steel Coil Wrapper		X		

Standard Features and Options for Horizontal Series

Features And Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Air Flow Arrangement				
Front Supply/Rear Return (CHF)	X			
Front Supply/Rear Return(CPF, CXF, CBF)	X			
Front Supply/ Bottom Return (CPF, CXF, CBF)		X		
Bottom Supply/Bottom Return (CBF, CXF)		X		
Bottom Supply/Rear Return (CBF, CXF)		X		
Coils				
2 Rows 2-Pipe		X		
3 Rows 2-Pipe	X			
4 Rows 2-Pipe		X		
3/1, 3/2, 4/1 Rows 4-Pipe		X		
Manual Air Vent	X			
0.025" Tube Thickness				X
Automatic Air Vent		X		
DX Coils		X		
Steam Coils		X		X
Copper Coil Fins (2, 3, 4, 5 Rows)		X		
Coil Test Pressure 350	X			
Coil Test Pressure 400, 450		X		
Connection				
Right or Left (Same End)	X			
Right or Left (Opposite End)		X		
Removable Drain Pan				
Galvanized Internally Coated with 2-part closed Cell Foam	X			
Stainless Steel Externally Coated		X		
Drip Lip (recommended with motorized valves)			X	
Extended Drain Pans (CHF, CPF)		X		
Secondary Drain Connection		X		
Fin Material				
Aluminum with Galvanized End Sheets	X			
Copper with Stainless End Sheets & Bottom Coil Baffle		X		X
Nichrome Wire Strip Electric Heater (Total and Auxiliary)				
		X		
Indoor Air Quality				
1" Throwaway non-woven synthetic filter (CPF, CXF, CBF)	X			
1" Permanent (CPF, CXF, CBF)		X		
1" Pleated MERV 8 (CPF, CXF, CBF)		X		
Bipolar Ionizer		X		
Side Filter Access (CPF)		X		

table continued on next page

Standard Features and Options for Horizontal Series, Cont'd.

Features And Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Insulation				
1/2" Standard Fiberglass	X			
1/2" Premium IAQ Fiberglass		X		X
1/2" Foil Face		X		
1/4" Closed Cell		X		
Motor Type				
PSC Motors with Quick Connect Plug	X			
ECM Motors with Quick Connect		X		
PSC Hi-Static Motors with Quick Connect				
Motor Voltage				
120/1/60 3-Speed	X			
208/230/277/1/60 3-Speed (Optional Voltage)		X		
Supply/Return Air Grilles				
Louvered Stamped Supply Grille (CXF)	X			
Double Deflection, Aluminum Finish Supply Grille		CXB	CHY, CPY, CBY	CHY, CPY, CBY
Double Deflection, Integral Supply Grille - painted		CXB		
Stamped Return Grille (CBF, CXF)	X			
Hinged Bar-Type, Aluminum-finish Return Grille with Throwaway Filter - F.O.			CHY, CPY, CBY	CHY, CPY, CBY
Paint Options (CBF, CXF)				
Arctic White	X			
Special Color				X
Controls				
Service Switch with Lockout Tabs		X		
Single Point Power Connection		X		
Incoming Power Fusing		X		
24V Controls		X		
Live Voltage Controls		X		
Condensate Float Switch		X		
3-Speed Switch		X	X	
Thermostats			X	
Custom Control (DDC)		X		X

Standard Features and Options for Hi-Performance Series

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Air Flow Arrangement				
Front Supply/Rear Return (HHF, HXF, HLF)	X			
Front Supply/Rear or Bottom Return (HPF)	X (Bottom)	X (Rear)		
Top Supply-Front/Bottom Return (VEF)	X (Front)	X (Bottom)		
Coils				
4-Rows 2-Pipe	X			
3- or 6-Rows 2-Pipe		X		
4/1, 4/2, 6/1 or 6/2-Rows 4-Pipe CW/HW (HHF, HXF, HLF, HPF)		X		
4/1, 4/2-Rows 4-Pipe only on VEF		X		
0.025" tube thickness				X
Manual Air Vent	X			
Automatic Air Vent		X		
Copper Coil Fins (3, 4, 5, 6, 7, 8)		X		
Coil Test Pressure 350	X			
Coil Test Pressure 400, 450		X		
Connection				
Right or Left (Same End)	X			
Drain				
Galvanized Internally Coated with a 2-part closed cell foam	X			
Stainless Steel Externally Coated		X		
Extended Drain Pan (Galvanized, Stainless Steel)		X		
Drip Lip			X	
Secondary Drain Connection		X		
Fin Material				
Aluminum w/Galvanized End Sheets	X			
Copper w/Stainless End Sheets & Bottom Coil Baffle		X		
Nickrome Wire Strip Electric Heater (Total and Auxiliary)		X		
Indoor Air Quality				
1" Throwaway (nonwoven synthetic) (HPF, HLF, HXF, VEY)	X			
1" Permanent (washable media) (HPF, HLF, HXF, VEY)		X		
1" Pleated MERV 8 (HPF, HLF, HXF, VEF)		X		
Bipolar Ionizer		X		
Side Filter Access (HPF, rear return, front supply)			X	
Insulation				
1/2" Fiberglass	X			
1/2" Premium Fiberglass (Exposed Edges Sealed)				X
1/2" Foil Face (Exposed Edges Sealed)		X		
1/4" Closed Cell		X		

table continued on next page

Standard Features and Options for Hi-Performance Series, Cont'd.

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Cabinet Construction				
18 gauge Single Wall	X			
6" Mounting Legs - set of 4			X	
Motor Type				
PSC Motors w/Quick Connect Plug	X			
EC Motor w/Quick Connect Plug		X		
Motor Voltage				
120/1/60 3-Speed	X			
208/230/277/1/60 3-Speed (Optional Voltage)		X		
Supply/Return Air Grilles				
Double Deflection, Aluminum Finish Supply Grille (HHF, HPF, HXF, VEF)			X	X
Double Deflection, Integral Supply Grille - Galvanized (HLF)	X			
Hinged Bar-type, Aluminum Finish Return Grille w/Throwaway Filter (HHF, HPF, VEF)			X	X
Paint Options (HLF)		X		X
Arctic White	X			
Special Color				X
Controls				
Service Switch with Lockout Tabs		X		
Single Point Power Connection		X		
Incoming Power Fusing		X		
24V Controls		X		
Line Voltage Controls				
Condensate Float Switch		X		
Three Speed Switch only	X		X	
Thermostats (Remote Mount)			X	
Custom Controls (DDC)		X		X

Standard Features and Options for Modular Hi-Rise Series

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Air Flow Arrangement				
See Unit Configuration	X			
Coils				
3-Rows 2-Pipe (MPF, MXF, MMF/MSF, MAF/MBF)	X			
4-Rows 2-Pipe (MPF, MXF, MMF/MSF, MAF/MBF)		X		
3/1, 3/2, or 4/1-Rows CW/HW (MPF, MXF, MMF/MSF, MAF/MBF)		X		
Manual Air Vent	X			
Automatic Air Vent		X		
Drain Pan				
Galvanized Internally Coated with a 2 part closed cell foam	X			
Stainless Steel Externally Coated with a 2 part closed cell foam		X		
Fin Material				
Aluminum w/Galvanized End Sheets	X			
Copper w/Stainless End Sheets & Bottom Coil Baffle		X		X
Nickrome Wire Strip Electric Heater				
		X		
Indoor Air Quality				
1" Throwaway non-woven synthetic	X			
1" Permanent (washable media or aluminum mesh)		X		X
1" MERV 8 Pleated		X		
Bipolar Ionizer		X		
Insulation				
1/2" Standard Fiberglass	X			
1/2" Premium IAQ Fiberglass, sealed edges		X		X
1/2" Foil Face, taped edges		X		
1/4" Closed Cell		X		
1 Hour Fire Rated Riser Chase (MAF/MBF)				
	X			
Motor Type				
PSC Motors	X			
ECM Motors		X		
Hi Static 3-Speed PSC Motors		X		X
Motor Voltage				
120/1/60 3-Speed	X			
208/230/277/1/60 3-Speed		X		
Supply Grilles				
Integral Double Deflection Aluminum Supply Grille (MXF)	X			
Double Deflection, Aluminum Supply Grille			X	
Double Deflection, Aluminum Supply Grille w/Opposed Blade Dampers			X	
Custom Supply Grille			X	X
Return Air Panel				
Louvered Front Panel (MXF)	X (M)			
Standard Height with or without Frame (All except MXF)	X (F)		X (F, H)	
Extended Height with or without Frame (All except MXF)			X (G, J)	
Extended Height with or without Control Door (All except MXF)			X (K, L)	
Custom Return Air Panel			X	X

table continued on next page

Standard Features and Options for Modular Hi-Rise Series, Cont'd.

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Cabinet Modifications				
Standard Height is 88", 79" Optional	X (88")	X (79")		X
Custom Options		X		X
Paint Options (Return Air Panel, Supply Air Grille)				
Arctic White	X			
Special Color				X
Risers				
Riser Factory Installed		X		
Risers Shipped Loose			X	X
Flex Hoses		X	X	X
Riser Length (to 115")	X			X (>115")
Riser Diameter (3/4" to 2-1/2")	X			X (>2-1/2")
Closed Cell Riser Insulation				
1/2"	X	X		
3/4"		X		
Fiberglass Riser Insulation				
1/2"		X		X
1"		X		X
Riser/Drain Material				
Type M Copper	X	X	X	
Type L Copper		X	X	
Riser Extension (M or L)			X	
Controls				
Service Switch with Lockout Tabs		X		
Single Point Power Connection		X		
Incoming Power Fusing		X		
24V Controls		X		
Condensate Float Switch		X		
Thermostats		X	X	
Surface Mounted w/Tile Ring			X	
Unit Mounted		X		
Wall/Remote Mounted			X	
Special Control (DDC)		X		X
Outside Air Dampers				
Manual Controlled Damper		X		
Motorized Controlled Damper		X		X

Filters

Nominal Filter Sizes

Vertical Series – All Vertical Series units have nonwoven synthetic throwaway filters furnished as standard equipment. Cleanable or pleated filters are optional.

Unit Size	Nominal One-Inch Filter Size – Inches (Millimeters)	
	FHF, FXF, FSF	LHF/LHW, LXF/LXW
01	–	–
02	7-3/4" x 21-3/4" (197 x 552)	7" x 21-3/4" (178 x 502)
03	7-3/4" x 25-3/4" (197 x 654)	7" x 26-3/4" (178 x 679)
04	7-3/4" x 31-3/4" (197 x 806)	7" x 34-3/4" (178 x 883)
06	7-3/4" x 41-3/4" (197 x 1060)	7" x 48-3/4" (178 x 1238)
08	7-3/4" x 43-3/4" (197 x 1111)	–
10	7-3/4" x 57-3/4" (197 x 1467)	–
12	7-3/4" x 65-3/4" (197 x 1670)	–

Horizontal Series – All cabinet model units (except CH and BH) have nonwoven synthetic throwaway filters furnished as standard equipment. Cleanable and pleated filters are optional.

Unit Size	Nominal One-Inch Filter Size - Inches (Millimeters)						
	CHF (Note 1)	CPF	CBF Bottom Return Stamped	CBF Rear Return Stamped	CXF Bottom Return Stamped	CXF Rear Return Stamped	CXF Rear Return Ducted
02	10" x 24" (254 x 610)	10" x 18" (254 x 457)	10" x 28" (254 x 711)	7" x 21" (178 x 533)	10" x 23-1/2" (254 x 597)	8" x 23-1/2" (203 x 597)	8" x 23-1/2" (203 x 597)
03	10" x 28" (254 x 711)	10" x 22" (254 x 559)	10" x 28" (254 x 711)	7" x 21" (178 x 533)	10" x 28" (254 x 711)	8" x 28" (203 x 711)	8" x 28" (203 x 711)
04	10" x 32" (254 x 813)	10" x 28" (254 x 711)	10" x 33" (254 x 838)	7" x 27" (178 x 533)	10" x 32-1/2" (254 x 826)	8" x 32-1/2" (203 x 826)	8" x 32-1/2" (203 x 826)
06	10" x 42" (254 x 1067)	10" x 33" (254 x 838)	10" x 45" (254 x 1143)	7" x 38" (178 x 965)	10" x 37" (254 x 940)	8" x 37" (203 x 940)	8" x 37" (203 x 940)
08	10" x 42" (254 x 1067)	10" x 40" (254 x 1016)	10" x 45" (254 x 1626)	7" x 38" (178 x 965)	10" x 41" (254 x 1041)	8" x 41" (203 x 1041)	8" x 41" (203 x 1041)
10	10" x 54" (254 x 1372)	10" x 54" (254 x 1372)	10" x 62" (254 x 1575)	7" x 52" (178 x 1321)	10" x 54-1/2" (254 x 1384)	8" x 54-1/2" (203 x 1384)	8" x 54-1/2" (203 x 1384)
12	10" x 64" (254 x 1626)	10" x 62" (254 x 1575)	10" x 62" (254 x 1575)	7" x 52" (178 x 1321)	10" x 63" (254 x 1600)	8" x 63" (203 x 1600)	8" x 63" (203 x 1600)

NOTES: 1. Filter sizes for the CH and BH models are recommended filter sizes only. No filter is factory provided with these models.
2. Sizes shown are nominal ordering sizes.

Filters, Cont'd.

Hi-Performance Series – All Hi-Performance Series units have nonwoven synthetic throwaway filters furnished as standard equipment. Cleanable filters are optional.

Unit Size	Nominal One-Inch Filter Size – Inches (Millimeters)				
	HH & HP	HX	HL	VE	VE*
06	14" x 21" (356 x 533)	14" x 14-3/4" (356 x 375)	14" x 14" (356 x 356)	21" x 12-3/4" (533 x 324)	21" x 12-3/4" (533 x 324)
08	14" x 26" (356 x 660)	14" x 19-3/4" (356 x 502)	14" x 20" (356 x 508)	26" x 12-3/4" (660 x 324)	25" x 12-3/4" (635 x 324)
10	14" x 30" (356 x 762)	14" x 23-3/4" (356 x 603)	14" x 24" (356 x 610)	30" x 12-3/4" (762 x 324)	29" x 12-3/4" (737 x 324)
12	14" x 35" (356 x 889)	14" x 28-3/4" (356 x 730)	14" x 28" (356 x 711)	35" x 12-3/4" (889 x 324)	34" x 12-3/4" (864 x 324)
14	14" x 40" (356 x 1016)	14" x 33-3/4" (356 x 857)	14" x 34" (356 x 864)	40" x 12-3/4" (1016 x 324)	39" x 12-3/4" (991 x 324)
16	14" x 45" (356 x 1143)	14" x 38-3/4" (356 x 984)	14" x 38" (356 x 965)	45" x 12-3/4" (1143 x 324)	44" x 12-3/4" (1118 x 324)
18	14" x 50" (356 x 1270)	14" x 43-3/4" (356 x 1111)	14" x 44" (356 x 1118)	50" x 12-3/4" (1270 x 324)	49" x 12-3/4" (1245 x 324)
20	14" x 54" (356 x 1372)	14" x 47-3/4" (356 x 1213)	14" x 48" (356 x 1219)	54" x 12-3/4" (1372 x 324)	53" x 12-3/4" (1346 x 324)

NOTES: * Use when bottom return and six-inch legs are supplied.

1. Filter sizes for the HH model are recommended filter sizes only. No filter is factory provided with this model.

Modular Series – All Hi-Performance Series units have nonwoven synthetic throwaway filters furnished as standard equipment. Cleanable filters are optional.

Unit Size	Nominal One-inch Filter Size
	MPF, MAF/MBF, MMF/MSF, MXF
03	12½ (316) x 24¼ (616)
04	12½ (316) x 24¼ (616)
06	16¼ (413) x 26¾ (679)
08	16¼ (413) x 26¾ (679)
10	20½ (521) x 29¼ (743)
12	20½ (521) x 29¼ (743)

NOTES: Sizes shown are nominal ordering sizes.

Options and Accessories

Control Packages

Controls

As detailed in the table below and on the subsequent pages, we offer control packages that fit most customer needs. Additional controls and devices are available to meet even the most demanding operating logic.

Low Voltage Control (24V)

The 85 Control Board (see page 58) offers simplified install and service with its plug-in connections and QR code for quick wiring diagram reference. It also offers LED diagnostics and built-in design flexibility for added features such as staged cooling or BAS signal input. The 85 Control board is available with most control schemes.

85 Control Board Standard Features

- Simplified plug connections
- PSC or ECM control
- LED diagnostics (See IOM-100 for detailed LED function and outcome)
- QR code to wire diagram for ease of troubleshooting
- Conduit compatible for remote mounted control boxes
- Compatibility with all actuator types
- Removable thermostat connector

85 Control Board Options

- ECM fan speed adjustment
- Staged Cooling: compatible with IEC Venture Wi-Fi Thermostat (E055 - 1520330)
- BAS signal input to interrupt fan and actuators
- Fusing and service switch with electric heat
- Changeover or aquastat sensor
- Condensate switch LED indication
- Damper control

Condensate Float Switch

This switch shuts down the motor, actuator and electric heat (if applicable) when the water level in the drain pan reaches an unsafe level.

Service Switches

We offer concealed service switches for use by maintenance and service personnel to shut off the power while working on the unit.

Fusing

We offer incoming power fusing for all units as well as blower motor and control sub-fusing (single power source wiring).

Other Control Options

- Line Voltage Control
- Unit mounted 3-speed switch (thermostat by others)
- 4-Speed silent switching board with potentiometers
- Low voltage remote shutdown relays (Special Quote)
- Fan and valve cycle applications (Special Quote)
- Thermostats available with large letter print for handicap applications (Special Quote)
- DX coil applications

Options and Accessories, Cont'd.

Thermostat Control Package Applications

Unit Type	Control Option	System Type	Changeover Type	W	P	N	F	G	A	B	
-	Manual Fan	Manual ¹	None	-	-	-	-	-	-	-	
2-Pipe	Valve Cycle	Heat Only	None	•	•	•	•	•	•	•	
		Cool Only	None	•	•	•	•	•	•	•	
		Heat/Cool	Manual	-	-	-	-	-	-	•	•
			Automatic	•	•	•	•	•	•	•	•
		Heat/Cool with Auxiliary Electric Heat	Manual	-	-	-	-	-	-	•	•
			Automatic	•	•	•	•	•	•	•	•
		Cool with Total Electric Heat	Manual	-	-	-	-	-	-	•	•
			Automatic	•	•	•	•	•	•	•	•
4-Pipe		Heat/Cool	Manual	-	-	-	-	-	•	•	
			Automatic	•	•	•	•	•	•	•	

NOTES: 1. Fan switch only; no thermostat.

Thermostat Features

All listed controls include fan switching.	Control Type ¹						
	W	P	N	F	G	A	B
24V, 115V, 208V, 240V, 277V	24V only	24V only	24V only	24V only	24V only	•	•
Wi-Fi Enabled	•	-	-	-	-	-	-
Mobile and Web App for Remote Control	•	-	-	-	-	-	-
Staged Cooling	•	-	-	-	-	-	-
Programmable	•	•	-	•	-	-	-
Remote Wall Mounted	•	•	•	•	•	•	•
Manual Fan Switch Operation	•	•	•	•	•	•	•
Auto Fan Speed Control	•	•	•	•	•	-	-
Continuous 3-Speed Fan	•	•	•	•	•	•	•
Cycling Fan	•	•	•	•	•	•	•
O.A Damper Signal	•	•	•	•	•	-	-
Remote Temperature Sensor	Opt	Opt	Opt	Opt	Opt	•	•
Digital Display & Buttons	•	•	•	•	•	-	-
Local Temperature Set-Back	•	•	•	•	•	-	-
Water Temperature Purge Cycle	•	•	•	•	•	-	-
Proportional Control Valves	-	-	-	•	•	-	-
Floating Control Valves	-	-	-	•	•	-	-
Pipe Sensor	•	•	•	•	•	-	-

NOTES: 1. Control packages with valve cycle are continuous fan operation only.
 2. All wall-mounted control packages are shipped loose for field installation (Boxes, tile rings, plaster rings, etc. are not provided.).
 3. Aquastats are included in control packages, as required.

LEGEND: A • Basic Electronic Wall Series, 155, Vertical
 B • Basic Electronic Wall Series, 155, Horizontal
 P • Basic 24 V Digital, 7-Day Programmable
 N • Basic 24 V Digital, Non-Programmable
 F • Premium 24 V Digital, 7-Day Programmable
 G • Premium 24 V Digital BACnet with Proportional Fan/Valves Option
 W • Venture 24 V Wi-Fi Programmable

Options and Accessories, Cont'd.



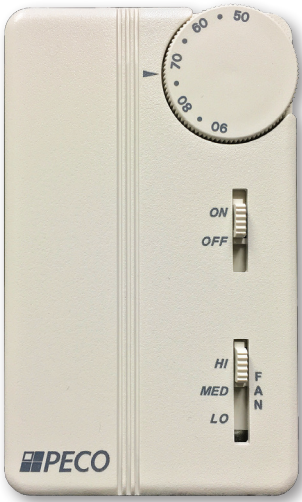
Venture 24V,
Wi-Fi Programmable



Basic 24V Digital
7-Day Programmable and
Non-Programmable Series



Premium 24V Digital
7-Day Programmable/BACnet



Basic Electronic Wall Series
155, Vertical and Horizontal



Basic Series, 156,
Unit Mounted

Options and Accessories, Cont'd.

Outside Air Dampers

FHF, FXF, FSF, LHF and LXF models may be supplied with an outside air inlet connection. A damper for control of the outside air is provided, and several styles of outside air damper control are available.

Manual

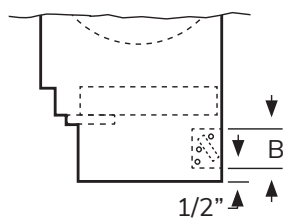
Control of the damper is by manual operation of the damper in the unit return air toe space. FHF, FXF and FSF models are provided with a lever arm on the damper. LHF and LXF models are provided with a sliding damper (not shown in illustration below).

Motorized

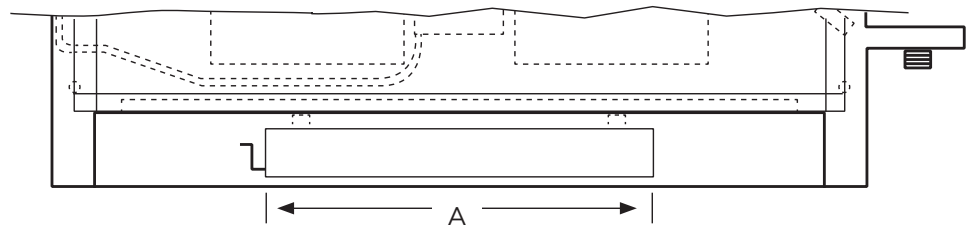
For FHF, FXF and FSF models only, control of the damper is achieved by a motorized operator installed in the left-hand end compartment. Consult the factory for application restrictions.

Unit Size	Nominal CFM	Outside Air Opening Dimensions – Inches (Millimeters)			
		FHF, FXF, FSF		LHF, LXF	
		Front View (A)	Side View (B)	Front View (A)	Side View (B)
02	200	8" (203)	2" (51)	6" (152)	2" (51)
03	300	10" (254)	2" (51)	6" (152)	2" (51)
04	400	12" (305)	2" (51)	6" (152)	2" (51)
06	600	14" (356)	2" (51)	6" (152)*	2" (51)*
08	800	18" (457)	2" (51)	–	–
10	1000	27" (686)	2" (51)	–	–
12	1200	27" (686)	2" (51)	–	–

NOTES: * Lowboy size 06 is provided with two 6" x 2" (152 x 51) openings.



Side View



Front View

Contact your IEC Representative for outside air options on other product models.

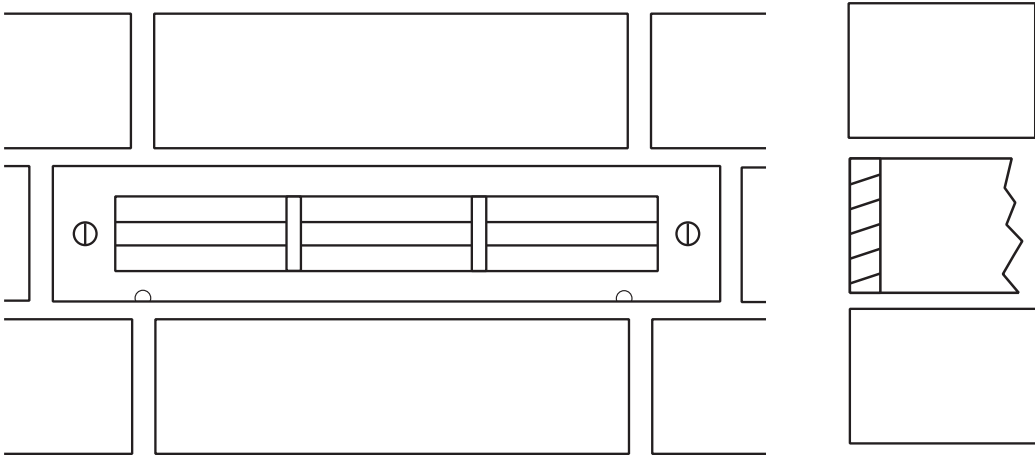
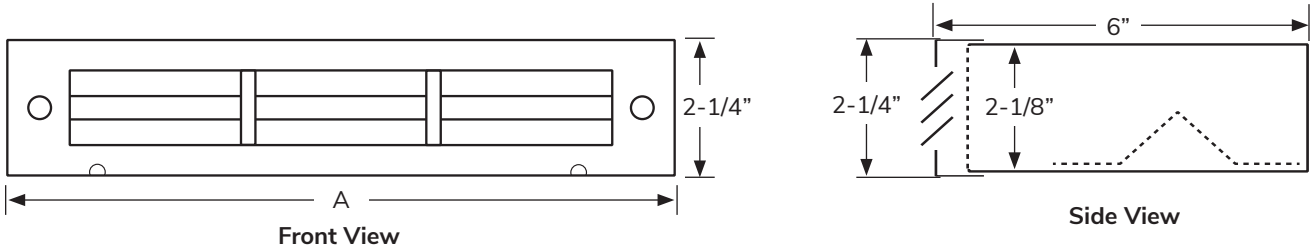
Options and Accessories, Cont'd.

Outside Air Wall Boxes

Optional outside air wall boxes are constructed of aluminum to minimize corrosion. A louvered grille caps the wall box on the exterior side. A fine mesh insect screen is installed behind the louver on the inside of the box.

Standard wall box depth is six inches with the width and length dimensions established to be used with the appropriate outside air openings.

Unit Size	Nominal CFM	Outside Air Opening Dimensions – Inches (Millimeters)	
		FHF, FXF, FSF	
		Front View (A)	Side View (B)
02	200	8-1/4" (203)	2-1/8" (54)
03	300	10-1/4" (260)	2-1/8" (54)
04	400	12-1/4" (311)	2-1/8" (54)
06	600	14-1/4" (362)	2-1/8" (54)
08	800	18-1/4" (464)	2-1/8" (54)
10	1000	27-1/4" (692)	2-1/8" (54)
12	1200	27-1/4" (692)	2-1/8" (54)



Typical Wall Installation

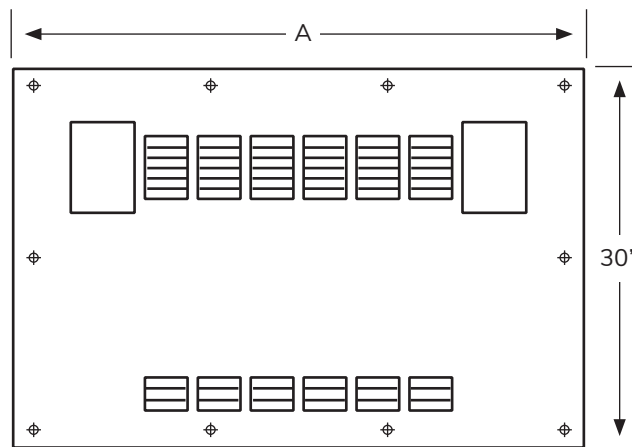
Options and Accessories, Cont'd.

Decorative Wall Panels

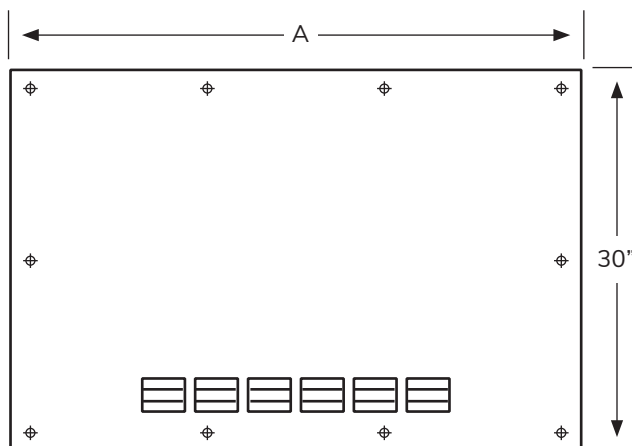
Optional decorative wall panels are used with FHF models when fully recessed into the wall of the conditioned space. The wall panels cover the recessed unit on all sides and can be removed for access to the unit for servicing. The wall panel provides the air seal for the front of the unit; therefore, installation alignment is critical. Consult the factory for installation instructions.

Two styles of decorative wall panels are available – Style U, with stamped return and supply louvers and front facing hinged-control access doors; and Style V, with stamped return louvers only.

Nominal CFM	Styles U and V Panel Width (A) Inches (Millimeters)
200	40" (1016)
300	44" (1118)
400	50" (1270)
600	60" (1524)
800	62" (1575)
1000	76" (1930)
1200	84" (2134)



Style U



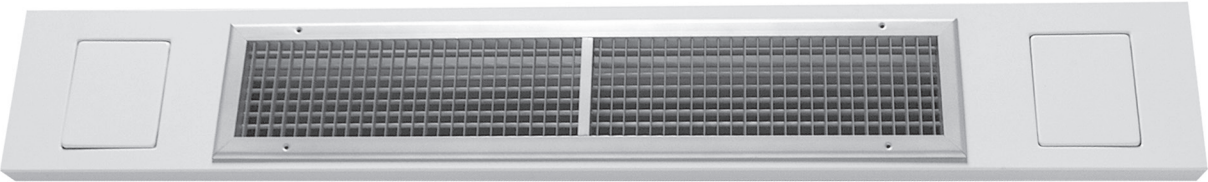
Style V

Options and Accessories, Cont'd.

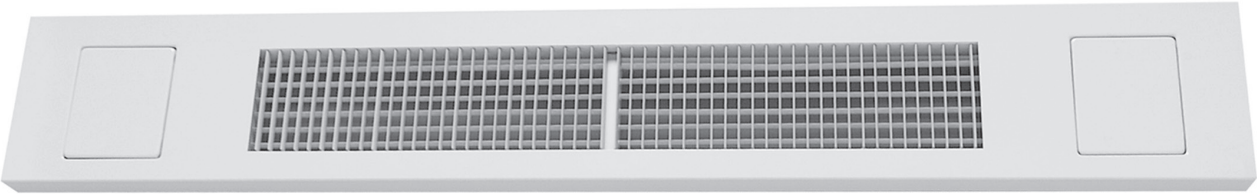
Supply Air Grilles

Unit Size	Nominal CFM	Recommended Grille Sizes – Inches (Millimeters)			
		FXF, FSF	LXF/LXW	FHF	LHF/LHW
02	200	16" x 6" (406 x 152)	16" x 6" (406 x 152)	16" x 5" (406 x 127)	16" x 5" (406 x 127)
03	300	20" x 6" (508 x 152)	22" x 6" (559 x 152)	20" x 5" (508 x 127)	22" x 5" (559 x 127)
04	400	26" x 6" (660 x 152)	30" x 6" (762 x 152)	26" x 5" (660 x 127)	30" x 5" (762 x 127)
06	600	36" x 6" (914 x 152)	44" x 6" (1118 x 152)	36" x 5" (914 x 127)	44" x 5" (1118 x 127)
08	800	38" x 6" (965 x 152)	–	38" x 5" (965 x 127)	–
10	1000	52" x 6" (1321 x 152)	–	52" x 5" (1321 x 127)	–
12	1200	60" x 6" (1524 x 152)	–	60" x 5" (1524 x 127)	–

- NOTES: 1. Refer to Submittal Data for actual unit supply air opening dimensions.
 2. FXF, FSF and LXF/LXW models supply air grilles are factory installed.
 3. Consult factory for application restrictions using double-deflection grilles with electric heat and maximum coil rows.
 4. FHF and LHF/LHW models supply air grilles are shipped loose.



Optional Double-deflection, Aluminum-finish Supply Grille
 (Shown in Top Panel)



Optional Double-deflection, integral Supply Grille (FSF, FXF and LXF Models Only),
 Painted to Match Color of Unit (Shown in Top Panel)



Optional Return Air Grille
 (FXF and FSF Models Only)
 Painted to Match Color of Unit

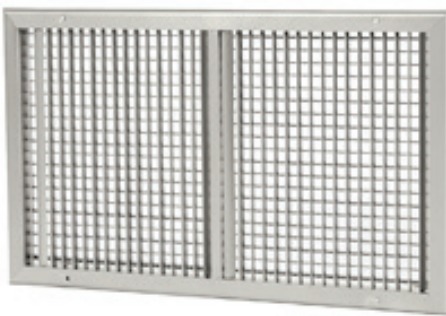
Options and Accessories, Cont'd.

Horizontal Supply Air Grilles

Unit Size	Nominal CFM	Recommended Grille Size - Inches (Millimeters)
02	200	16" x 6" (406 x 152)
03	300	20" x 6" (508 x 152)
04	400	26" x 6" (660 x 152)
06	600	30" x 6" (762 x 152)
08	800	38" x 6" (965 x 152)
10	1000	52" x 6" (1320 x 152)
12	1200	60" x 6" (1524 x 152)

Horizontal Return Air Filter Grilles

Unit Size	Nominal CFM	Recommended Grille Size - Inches (Millimeters)
02	200	24" x 10" (610 x 254)
03	300	28" x 10" (711 x 254)
04	400	32" x 10" (813 x 254)
06	600	42" x 10" (1067 x 254)
08	800	42" x 10" (1067 x 254)
10	1000	54" x 10" (1372 x 254)
12	1200	64" x 10" (1626 x 254)



Double-deflection,
Aluminum-finish Supply Grille



Hinged Bar Type, Aluminum-finish Return
Grille with Throwaway Filter



Double-deflection,
Integral Supply Grille
(CX & HL Models Only)
Painted to Match Color of Unit

Hi-Performance Supply Air Grilles

Unit Size	Nominal CFM	Nominal One-Inch Filter Size		
		HH & HP	HX	VE
06	600	14" x 14" (356 x 356)	15" x 14" (381 x 356)	15" x 15" (381 x 381)
08	800	19" x 14" (483 x 356)	20" x 14" (508 x 356)	20" x 15" (508 x 381)
10	1000	23" x 14" (584 x 356)	24" x 14" (610 x 356)	24" x 15" (610 x 381)
12	1200	28" x 14" (711 x 356)	29" x 14" (737 x 356)	29" x 15" (737 x 381)
14	1400	33" x 14" (838 x 356)	34" x 14" (864 x 356)	34" x 15" (864 x 381)
16	1600	38" x 14" (965 x 356)	39" x 14" (991 x 356)	39" x 15" (991 x 381)
18	1800	43" x 14" (1092 x 356)	44" x 14" (1118 x 356)	44" x 15" (1118 x 381)
20	2000	47" x 14" (1194 x 356)	48" x 14" (1219 x 356)	48" x 15" (1219 x 381)

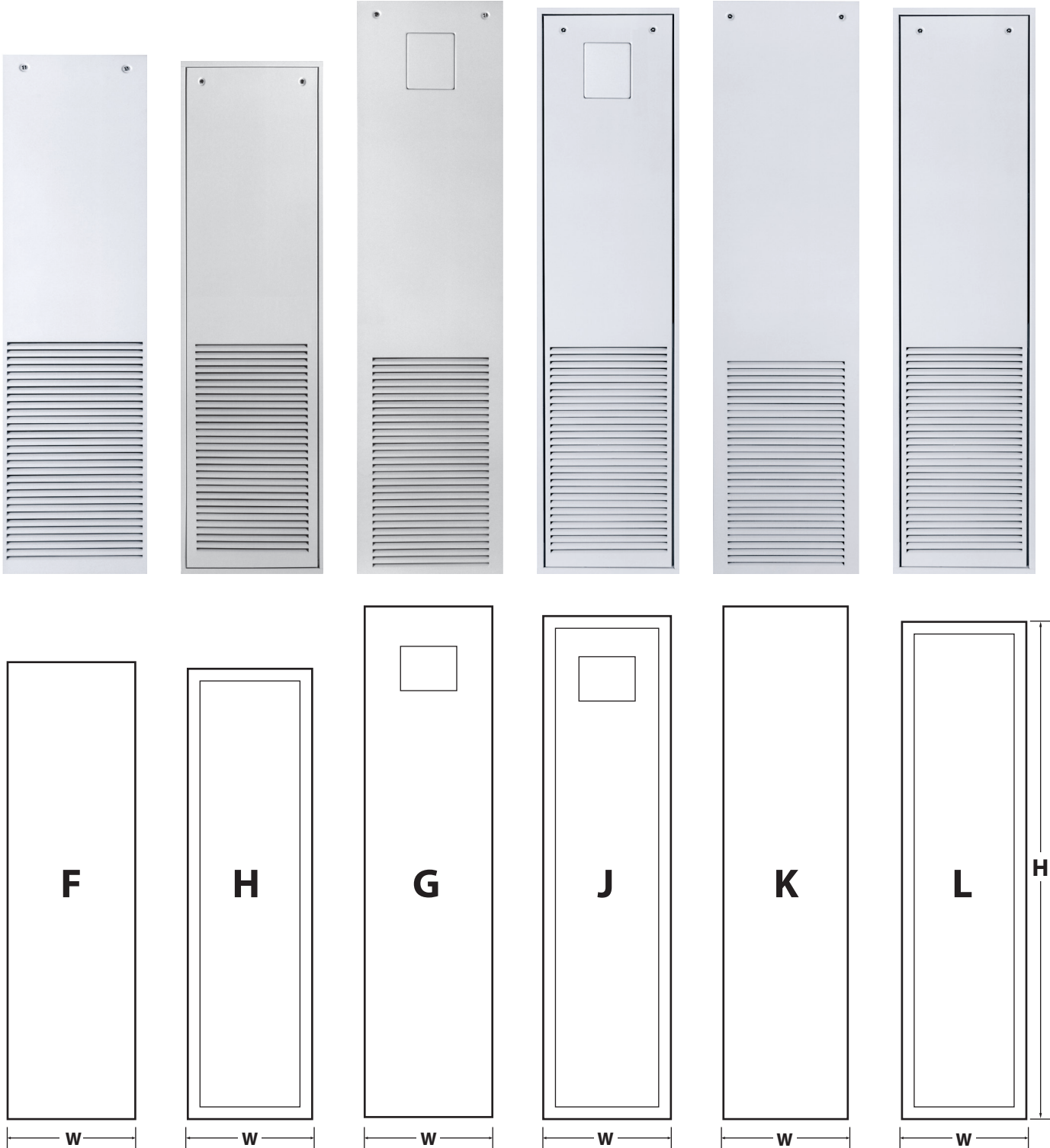
Hi-Performance Supply Air Grilles

Unit Size	Nominal CFM	Nominal One-Inch Filter Size		
		HH & HP	HX	VE
06	600	21" x 14" (533 x 356)	15" x 14" (381 x 356)	20" x 15" (508 x 381)
08	800	26" x 14" (660 x 356)	20" x 14" (508 x 356)	25" x 15" (635 x 381)
10	1000	30" x 14" (762 x 356)	24" x 14" (610 x 356)	29" x 15" (737 x 381)
12	1200	35" x 14" (889 x 356)	29" x 14" (737 x 356)	34" x 15" (864 x 381)
14	1400	40" x 14" (1016 x 356)	34" x 14" (864 x 356)	39" x 15" (991 x 381)
16	1600	45" x 14" (1143 x 356)	39" x 14" (991 x 356)	44" x 15" (1118 x 381)
18	1800	50" x 14" (1270 x 356)	44" x 14" (1118 x 356)	49" x 15" (1245 x 381)
20	2000	54" x 14" (1372 x 356)	48" x 14" (1219 x 356)	53" x 15" (1346 x 381)

NOTES: 1. Refer to Submittal Data for actual unit return air opening dimensions.
 2. Field-furnished duct transitions may be required.

Options and Accessories, Cont'd.

Optional Steel Return Air Panels



NOTE: See table on next page for height and width information.

Options and Accessories, Cont'd.

Panel Type	Unit Size and Dimensions					
	03/04		06/08		10/12	
	H	W	H	W	H	W
F	55.5 (1410)	15.5 (394)	55.5 (1410)	19.5 (495)	55.5 (1410)	23.5 (597)
G	61.1 (1552)	15.5 (394)	61.1 (1552)	19.5 (495)	61.1 (1552)	23.5 (597)
H	54.7 (1389)	15.1 (384)	54.7 (1389)	19.1 (485)	54.7 (1389)	23.1 (587)
J	60.4 (1534)	15.1 (384)	60.4 (1534)	19.1 (485)	60.4 (1534)	23.1 (587)
K	61.1 (1552)	15.5 (394)	61.1 (1552)	19.5 (495)	61.1 (1552)	23.5 (597)
L	60.4 (1534)	15.1 (384)	60.4 (1534)	19.1 (485)	60.4 (1534)	23.1 (587)

NOTE: Dimensions shown in inches and millimeters {inches(mm)}.

General Specifications:

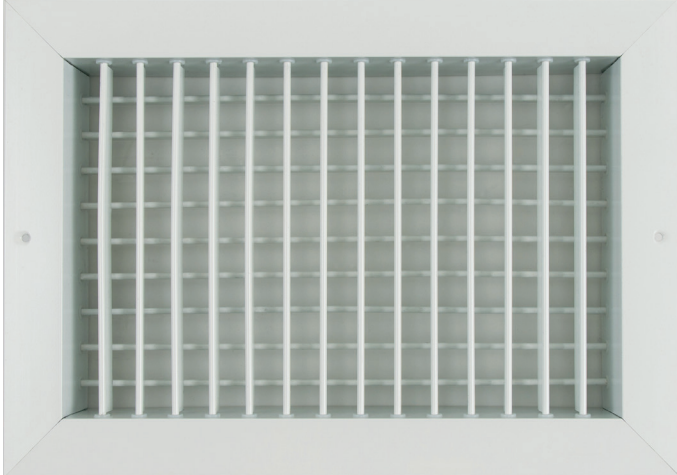
- Heavy gauge galvanized steel with arctic white powder-coat finish
- Rear of panel is insulated with 1/2" dual density fiberglass
- Integral stamped steel return air grille
- 1/4 turn tamper-proof fasteners for panel removal
- Removal of panel provides service access to all internal components
- Framed panel series requires separate field installation of frame

Return Air/Access Panel Application

Control Mounting Options	Panel
1. Surface mounted controls: This requires a tile ring mounted above the return air panel and quick-connect plug wiring on the thermostat. After the drywall/sheet rock has been applied to the cabinet, the thermostat plug will be attached to a matching plug in the unit and the thermostat will be fastened to the tile ring. (Not available for MXY models)	F, H, R, S
2. Unit mounted: Thermostat is mounted behind the control door or the return air panel.	G, J, K, L
3. Remote wall mounted: Thermostat is mounted on a wall remote from the cabinet and wiring from the unit to thermostat is done in the field.	F, H, K, L, R, S
4. Other Considerations: All above (#1, 2, & 3) are for drywall attached directly to the cabinet. (Not available for MXY models).	F, H, J, L, R, S

Options and Accessories, Cont'd.

MOD Supply Air Grilles



NOTE: Standard style supply air grille shown.

Frame and blades are 6063 extruded aluminum alloy with 200-R1 satin anodized finish. The frame has a typical wall thickness of .050" and is separated from the blades with injection-molded nylon bushings. This method of assembly minimizes corrosion and vibration. The frame mounting holes are dimpled, allowing for a counter-sunk fastener head appearance. (Suitable for sidewall application.)

All blades are airfoil in design, individually adjustable and spaced 3/4" on center. At the outer edge of the frame is a specially engineered channel which retains an extruded flexible vinyl bulb gasket that produces a positive air seal at the mounting surface, minimizing smudging.

An optional opposed blade damper is screwdriver-operated through the face of the unit and has the same extruded aluminum construction and injection-molded nylon bushings.

The unit achieves an effective area of 80% with the blades set at a 0° pattern, thus eliminating high velocity and pressure drop at the grille face. Wider deflection with reduced throw may be achieved at the 22° and 45° blade settings with slightly increased sound levels.

Unit Size	Nominal CFM	Recommended Grille Sizes		
		Single Supply*	Double Supply	Top Supply
03	300	14 (356) x 8 (203)	14 (356) x 6 (152)	14 (356) x 10 (254)
04	400	14 (356) x 12 (305)	14 (356) x 6 (152)	14 (356) x 10 (254)
06	600	18 (457) x 10 (254)	18 (457) x 6 (152)	16 (406) x 12 (305)
08	800	18 (457) x 12 (305)	18 (457) x 6 (152)	16 (406) x 12 (305)
10	1000	22 (559) x 16 (406)	22 (559) x 8 (203)	18 (457) x 16 (406)
12	1200	22 (559) x 16 (406)	22 (559) x 8 (203)	18 (457) x 16 (406)

NOTE: Single-side supply units are available with indicated supply openings on 88 inches tall cabinets only. Consult the factory for cabinets less than 88 inches.

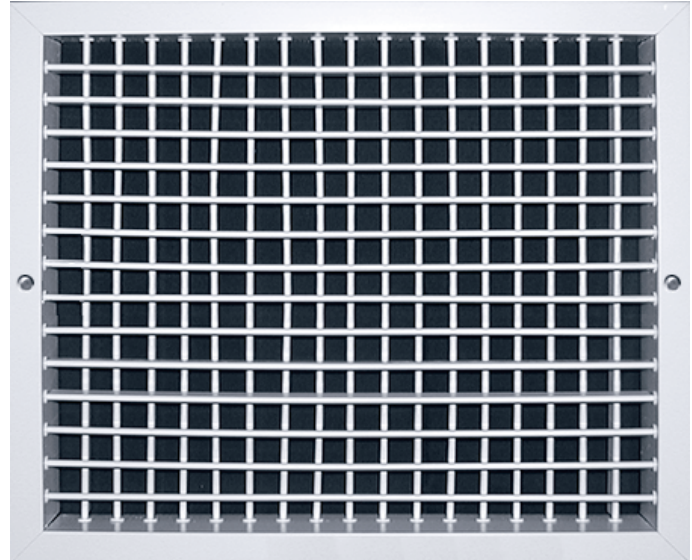
Options and Accessories, Cont'd.

MOD Framed Aluminum Return Air Grille and Supply Air Grille

The Framed Aluminum Return Air Grille and Supply Air Grille are available through Special Feature Request only. Contact factory for application.



- Type R:**
Anodized Aluminum
- Type S:**
Arctic White



NOTE: Aluminum style supply air grille shown. Reference Table 14 for grille dimensions.

General Specifications:

- Fully louvered core grille is mounted in a full frame.
- Core grille is removable without tools and provides access to all internal components.
- Frame is clear anodized extruded aluminum.
- Grille louvers are also clear anodized extruded aluminum.
- Designed for use with surface mounted or remote wall mounted controls.
- Use with dry wall directly applied to cabinet or with space between dry wall and cabinet.

	Unit Size and Dimensions ¹		
	03/04	06/08	10/12
W	15.2 (386)	19.2 (488)	23.2 (589)
H	55.3 (1405)	55.3 (1405)	55.3 (1405)

NOTE: Dimensions shown in inches and millimeters [inches(mm)].

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SureFlow® Series

FAN COIL TECHNICAL CATALOG



Contact your local IEC Sales Representative for further details and pricing applicable to this product. Visit our website (iec-okc.com) to find your local IEC Sales Rep.

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