

INTRODUCTION

Krueger vertical floor mounted fan coil units are designed to maximize flexibility of selection and installation.

The units are also designed to exceed the stringent quality standards of the institutional market, while remaining cost competitive in the light commercial segment of the market.

Krueger vertical fan coil units set the new standards for quality, flexibility, and competitive pricing.

MODEL

KVFS - Vertical Fan Coil, Slant Top

KVFF - Vertical Fan Coil, Flat Top

KVFH - Vertical Fan Coil, Concealed Floor



KVFS



KVFF



KVFH

PRODUCT DESCRIPTION

DESIGNED FOR MAXIMUM FLEXIBILITY

The extensive variety of standard options available on vertical floor fan coil units are where you find the versatility to fit any HVAC system designer's needs. Models KVFF and KVFS allow for additional height and width dimensions to meet architectural demand.

Options include: single wall stainless steel drain pan; MERV 8 and MERV 13 filters; and electric heat with single point power connection. All electric heat units are listed with ETL as an assembly and carry the cETL label.

All units comply with the latest edition of AHRI Standard 440 for testing and rating fan coil units, are certified, and display the AHRI symbol.

High efficiency motors, fan relays, disconnects and fusing mean easier coordination between mechanical and electrical trades.

Coil options allow for 3 or 4-row chilled water or DX cooling coils, and 1 or 2-row hot water heating coils.

Silent solid state relays are available for fan and electric heat control in sound sensitive environments

OPTIMUM BUILDING PERFORMANCE

Concealed vertical floor fan coil chassis are built from galvanized steel. This metal surpasses the ASTM 125 hour salt spray test for corrosion and rust. Exposed cabinet models are powder coated galvanized steel.

All units, with or without electric heat, are cETL listed and labeled. All wiring is in compliance with NEC, assuring safety and quality for the owner.

Floor mounted cabinet models feature finned tubular heating elements in the reheat position, protecting room occupants from electrical shock.

Vertical floor fan coil units have a removable fan/drain pan assembly. The entire fan assembly can be easily removed from the unit and serviced on a workbench.

Filters are easily replaceable from the return air toe space without the need for tools or removal of the front panel.

CONVENIENT INSTALLATION

All vertical floor fan coils are shipped completely assembled, reducing field installation time and labor. All units are thoroughly inspected and tested prior to shipment, eliminating potential problems at startup. Motor wiring is brought to a junction box on the inside of the unit end pocket, reducing electrical hook-up time.

Factory furnished valve packages assure proper fit, operation and performance.

CONSTRUCTION FEATURES

End Pockets: The 8" end pockets allow for accessibility and service of optional factory piping packages and controls. End panels are removable to allow for even greater access.

Fan Deck: The fan/drain pan assembly is easily removable for service access to motors and blowers at, or away from, the unit.

Fan Deck Removal: KVF units allow for a single technician to service the fan/motor by keeping the fan deck to less than 44". Motors are supplied with quick connectors to allow electrical service without the need for tools.

Drain Pan: The sloped insulated primary drain pan is available in stainless steel construction. Standard drain pan is externally insulated, single wall galvanized steel. The KVF Series fan/drain pan assembly is easily removable for cleaning.

Coils: All fan coils are available in 2 or 4-pipe configurations. The heating coil is standard in the reheat position. Heating and cooling coils are available with the same or opposite end connections. Access for cleaning on the entering air side is available when the drain pan is removed. Coils are removable for service.

Filter: The filter is easily replaceable through the return air toe space without requiring removal of the front panel.

Powder Coated Painted Surface: Exposed cabinet Models KVFF and KVFS, as well as supply and return air grilles and the KVFH wall recessing panel, feature a powder coat finish that resists scuffing, scratching, fading, and fingerprints.

Control Enclosure: The KVF control enclosure provides adequate space for the unit controller and fan coil relay. The fan coil relay is designed to limit diagnostic problems, while allowing for multi-voltage fan power input. The board is designed for factory installed, color coded, plug and play connections designed to ensure accurate wiring.

Piping Packages: Factory installed piping packages come equipped with components specific to the project. Actuators ship with color coded plug and play connections for quick, accurate installations

Lid Removal: Top panel is removable from fan coil without the need to disconnect piping or electrical wires.

PRODUCT DESCRIPTION

STANDARD FEATURES

Construction

All Units

- AHRI 440 certified and labeled
- Galvanized steel construction
- Insulation: elastomeric closed cell foam
- Integral filter rack with 1" throwaway filter

Concealed Units

- Top supply with duct collar

Exposed Units

- Top stamped louver supply grille
- Durable powder coat paint
- End pockets with removable panels
- 20 gauge exterior panel construction
- Flat top
- Slant top

Coils

- Cooling - 3 or 4-row chilled water or DX, heat pump compatible
- Heating - 1 or 2-row hot water – reheat position
- 1/2" O.D. seamless copper tubes
- 0.016" tube wall thickness
- High efficiency aluminum fin surface for optimizing heat transfer, pressure drop and carryover
- Left or right-hand, same or opposite end connections
- Removable for service
- Manual air vents

Drain Pans

- Single wall, galvanized steel, externally insulated – fire retardant and antimicrobial
- Positively sloped to drain connection
- 3/4" M.P.T. auxiliary drain pan connection
- Double wall plastic auxiliary drip pan

Fan Assemblies

- Forward curved, DWDI centrifugal type
- 115 volt, 1-phase, 3-speed PSC motors
- Quick disconnect motor connections
- Removable for service

Electrical

- cETL listed for safety compliance
- Electrical junction box for field wiring terminations
- Terminal block for field connections

Electric Heat

- Finned tubular element on all floor mounted units protects against electrical shock
- ETL listed as an assembly for safety compliance
- Integral electric heat assembly with removable elements for easy service
- Automatic reset primary and back-up secondary thermal limits
- Single point power connection

OPTIONAL FEATURES

Construction

All Units

- Manual and motorized outside air dampers
- Spare 1" throwaway filters and 1" pleated filters (MERV 8 & 13)
- Wall boxes
- Leveling legs

Concealed Units

- Wall recessing panels

Exposed Units

- Linear bar discharge grille, powder coated
- 16 gauge front panel
- Return air louver grille
- 2" - 8" falsebacks
- Extended end pockets
- Tamper proof fasteners

Coils

- Automatic air vents
- Stainless steel coil casings
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)

Drain Pans

- Stainless steel construction with external insulation
- Double wall plastic auxiliary drain pan - extended length
- Stainless steel auxiliary drain pan - extended length

Fan Assemblies

- 115, 208-230, 220 and 277 volt, 1-phase EC motors

Electrical

- SCR fan speed controller
- Fan relay packages
- Silent solid state fan relays
- Toggle disconnect switch
- Condensate overflow switch (auxiliary drain pan)
- 2-10VDC, 3-speed fixed or adjustable ECM control
- Unit and remote mounted 3-speed fan switches

Electric Heat

- Door interlocking disconnect switches
- Main fusing
- Silent relay/contactors

Piping Packages

- Factory assembled – shipped loose for field installation
- 1/2" and 3/4", 2 and 3-way normally closed, 2-position electric motorized valves
- Isolation ball valves with memory stop
- 4-pipe with 3-way valve
- Fixed and adjustable flow control devices
- Unions and P/T ports
- Modulating control valves
- High pressure close-off actuators (1/2" = 50 PSIG; 3/4" = 25 PSIG)

Thermostats

- Digital display; programmable; auto/manual changeover
- Unit and remote mounted with integral 3-speed fan switch
- 2 and 4-pipe control sequences

KVF SERIES

Vertical | Standard



PRODUCT DESCRIPTION | CONSTRUCTION HIGHLIGHTS

END POCKETS: The 8" end pockets allow for accessibility and service of optional factory piping packages and controls. End panels are removable to allow for even greater access.



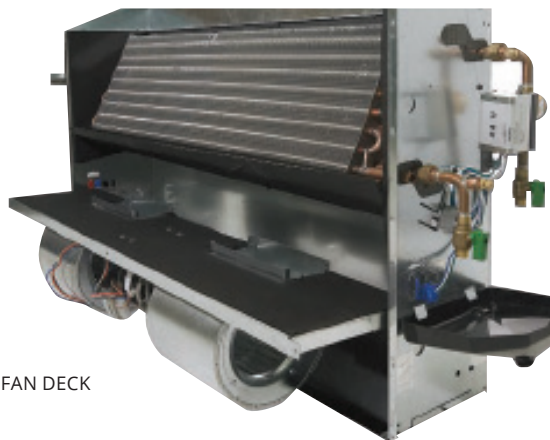
END POCKETS

COILS: All fan coils are available in 2-pipe or 4-pipe configurations. The heating coil is standard in the reheat position. Heating and cooling coils are available with the same or opposite end connections. Access for cleaning on the entering air side is available when the drain pan is removed. Coils are removable for service.



COILS

FAN DECK: The fan/drain pan assembly is easily removable for service access to motors and blowers at, or away from, the unit.



FAN DECK

FILTER: The filter is easily replaceable through the return air toe space without requiring removal of the front panel.



FILTER

DRAIN PAN: The sloped insulated primary drain pan is available in stainless steel construction. Standard drain pan is externally insulated, single wall galvanized steel. The KVF Series fan/drain pan assembly is easily removable for cleaning.

POWDER COATED PAINTED SURFACE: Exposed cabinet Models KVFF and KVFS, as well as supply and return air grilles and the KVFH wall recessing panel, feature a powder coat finish that resists scuffing, scratching, fading, and fingerprints.

FAN COIL UNITS | VERTICAL, STANDARD

KVF SERIES

PRODUCT DESCRIPTION | CONSTRUCTION HIGHLIGHTS

CONTROL ENCLOSURE: The KVF control enclosure provides adequate space for the unit controller and fan coil relay. The fan coil relay is designed to limit diagnostic problems, while allowing for multi-voltage fan power input. The board is designed for factory installed, color coded, plug and play connections designed to ensure accurate wiring.



CONTROL ENCLOSURE

PIPING PACKAGES: Factory installed piping packages come equipped with components specific to the project. Actuators ship with color coded plug and play connections for quick, accurate installations.



PIPING PACKAGES

FAN DECK REMOVAL: KVF units allow for a single technician to service the fan/motor by keeping the fan deck to less than 44". Motors are supplied with quick connectors to allow electrical service without the need for tools.



FAN DECK REMOVAL

LID REMOVAL: Top panel is removable from fan coil without the need to disconnect piping or electrical wires.



LID REMOVAL

KVF SERIES

Vertical | Standard



PRODUCT DESCRIPTION | FEATURES DETAIL

All units are cETL and AHRI 440 listed and labeled

Baked anodic acrylic powder paint (exposed cabinet models)

Control access door provided with unit mounted t-stat

Standard insulation is closed cell foam

Stamped louver or linear bar discharge grilles

Single point power connection on all units with and without electric heat

Double wall plastic auxiliary drain pan, standard or extended length (extended KVF only)

Open toe space or decorative return grille



Electric heat element installed to avoid drips from coil condensate

Single wall galvanized insulated drain pans are double sloped to drain connections

Chilled water or DX cooling coils up to 4 rows

Hot water and steam heating coils up to 2 rows are located in the reheat position

Entire electric heat assembly can be removed for servicing

Fan/drain pan assembly can be easily removed for cleaning and servicing

Permanently lubricated, three tap, PSC fan motors designed for quiet and efficient operation

Optional finned tubular electric resistance heat (not shown) to prevent electrical shock. ETL listed as an assembly for safety compliance.

Integral filter rack with 1" throwaway filter on all units

Optional electronically commutated (brushless DC) motor

FAN COIL UNITS | VERTICAL, STANDARD

KVF SERIES

COIL & FILTER DATA

COILS

Krueger offers hot water, chilled water, and direct expansion (DX) coils for specific application with all vertical floor fan coil units. Strict on-site inspection before, during, and after installation guarantees the highest quality and performance available.

STANDARD FEATURES

- Cooling - 3 or 4-row chilled water or DX
- Heating - 1 or 2-row hot water
- 4 max total rows of cooling and heating coils
- 1/2" O.D. seamless copper tubes
- 0.016" tube wall thickness
- High efficiency aluminum fin surface for optimizing heat transfer, pressure drop and carryover
- Left or right-hand, same or opposite side connections
- Manual air vents

OPTIONAL FEATURES

- Automatic air vents
- Stainless steel coil casings
- DX coils are heat pump compatible
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)

NOMINAL COIL CONNECTION SIZES

UNIT SIZE	WATER COIL TYPE									
	HOT WATER		COLD WATER		REFRIGERANT (DX)					
	1-ROW	2-ROW	3-ROW	4-ROW	2-ROW		3-ROW		4-ROW	
					LIQUID	SUCTION	LIQUID	SUCTION	LIQUID	SUCTION
02 - 12	5/8" (16)	5/8" (16)	7/8" (22)	7/8" (22)	3/8" (10)	5/8" (16)	3/8" (10)	5/8" (16)	3/8" (10)	5/8" (16)

NOTES: All dimensional data is outside diameter (O.D.), measured in inches (millimeters). Connection sizes are for standard circuit coils. Consult Krueger for special applications. See submittal drawings for connection locations.

FACE AREA, FREE AREA AND FILTER SIZES

UNIT SIZE	COIL FACE AREA	DISCHARGE GRILLE FREE AREA	FILTER FACE AREA	NOMINAL FILTER SIZES
02	0.97" [.090]	0.47" [.044]	1.40" [.130]	9.25" x 21.75" x 1" (235" x 552" x 25.4")
03	1.25" [.116]	0.56" [.052]	1.65" [.154]	9.25" x 25.75" x 1" (235" x 654" x 25.4")
04	1.67" [.155]	0.66" [.061]	2.04" [.189]	9.25" x 31.75" x 1" (235" x 806" x 25.4")
06	2.36" [.219]	0.94" [.087]	2.68" [.249]	9.25" x 41.75" x 1" (235" x 1060" x 25.4")
08	2.50" [.023]	0.94" [.087]	2.79" [.260]	(2) 9.25" x 21.75" x 1" (235" x 552" x 25.4")
10	3.47" [.322]	1.31" [.122]	3.69" [.343]	(1) 9.25" x 25.75" x 1" (235" x 654" x 25.4") (1) 9.25" x 31.75" x 1" (235" x 806" x 25.4")
12	4.03" [.374]	1.50" [.139]	4.19" [.389]	(3) 9.25" x 21.75" x 1" (235" x 552" x 25.4")

NOTES: Face and free areas are in square feet [square meters]. Filter sizes are in inches (millimeters).

KVF SERIES

Vertical | Standard



AHRI RATINGS

MODEL	SIZE	COIL		AIRFLOW CFM (DRY FLOW)	COOLING CAPACITY		WATER		POWER INPUT (Watts)
		ROWS	FPI		QT (BTUH)	QS (BTUH)	FLOW RATE (GPM)	WPD (ft-wg)	
KVFH	02	3	12	231	5700	4400	1.3	2.6	38
	03	3	12	311	8500	6300	1.9	5.85	46
	04	3	12	425	10500	8100	2.4	3.04	51
	06	3	12	602	14900	11400	3.3	2.88	77
	08	3	12	796	19800	14900	4.5	5.62	181
	10	3	12	983	27600	20100	6.3	7.42	170
	12	3	12	1192	28100	21700	6.4	2.88	298
	02	4	12	210	7800	5500	1.8	6.16	41
	03	4	12	281	9100	6800	2.1	2.72	56
	04	4	12	375	12200	9100	2.8	2.3	63
	06	4	12	546	21400	14700	4.9	8.58	87
	08	4	12	722	27400	19000	6.2	14.33	200
10	4	12	901	35300	24300	7.9	15.57	192	
12	4	12	1098	35100	26200	7.9	2.16	330	
KVFF	02	3	12	221	5500	4300	1.3	2.44	45
	03	3	12	301	8300	6200	1.9	5.63	44
	04	3	12	423	10600	8100	2.4	3.05	49
	06	3	12	599	14900	11400	3.3	2.88	77
	08	3	12	823	20400	15400	4.7	6.04	197
	10	3	12	981	27700	20100	6.3	7.42	180
	12	3	12	1178	28200	21700	6.4	2.88	212
	02	4	12	200	7500	5300	1.7	5.91	62
	03	4	12	269	8700	6500	1.9	2.4	47
	04	4	12	379	12300	9100	2.8	2.3	54
	06	4	12	546	21300	14700	4.8	8.3	84
	08	4	12	748	28200	19600	6.4	15.19	218
10	4	12	893	35300	24200	7.9	15.57	197	
12	4	12	1077	35000	25900	7.9	2.17	225	
KVFS	02	3	12	221	5500	4300	1.3	2.44	45
	03	3	12	301	8300	6200	1.9	5.63	44
	04	3	12	423	10600	8100	2.4	3.05	49
	06	3	12	599	14900	11400	3.3	2.88	77
	08	3	12	823	20400	15400	4.7	6.04	197
	10	3	12	981	27700	20100	6.3	7.42	180
	12	3	12	1178	28200	21700	6.4	2.88	212
	02	4	12	200	7500	5300	1.7	5.91	62
	03	4	12	269	8700	6500	1.9	2.4	47
	04	4	12	379	12300	9100	2.8	2.3	54
	06	4	12	546	21300	14700	4.8	8.3	84
	08	4	12	748	28200	19600	6.4	15.19	218
10	4	12	893	35300	24200	7.9	15.57	197	
12	4	12	1077	35000	25900	7.9	2.17	225	

NOTES: Based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F temperature rise, high fan speed. Motor type is ECM and motor voltage is 115/1/60. Airflow under dry coil conditions. Model KHFE tested at 0.0" external static pressure. Model KHFP tested at 0.05" external static pressure.

UNIT WEIGHTS

COMPONENT	UNIT SIZE							
	02	03	04	06	08	10	12	
KVFH BASE UNIT	36 [16]	45 [20]	55 [25]	62 [28]	66 [30]	92 [42]	105 [48]	
KVFF BASE UNIT	66 [30]	74 [34]	87 [39]	96 [44]	102 [46]	131 [59]	149 [68]	
KVFS BASE UNIT	68 [31]	76 [34]	89 [40]	99 [45]	102 [46]	135 [61]	153 [69]	
COIL ROWS	1 - DRY	9 [4]	10 [5]	12 [5]	14 [6]	15 [7]	18 [8]	21 [9]
	1 - WET	12 [5]	13 [6]	17 [7]	19 [9]	20 [9]	25 [11]	29 [13]
	2 - DRY	12 [5]	13 [6]	16 [7]	17 [8]	19 [9]	24 [11]	26 [12]
	2 - WET	16 [7]	17 [8]	21 [9]	25 [11]	26 [12]	32 [15]	37 [17]
	3 - DRY	15 [7]	17 [8]	19 [9]	23 [10]	24 [11]	29 [13]	34 [15]
	3 - WET	19 [9]	21 [10]	26 [12]	31 [14]	33 [15]	41 [18]	48 [22]
	4 - DRY	18 [8]	21 [10]	25 [11]	29 [13]	31 [14]	37 [17]	43 [19]
	4 - WET	25 [11]	27 [12]	34 [15]	40 [18]	42 [19]	51 [23]	61 [28]

NOTE: Unit weight data is in pounds [kilograms].

HEATING CAPACITY

UNIT SIZE	1-ROW				2-ROW			
	CFM	QS (MBH)	GPM	WPD	CFM	QS (MBH)	GPM	WPD
KVF02	230	7579	0.4	0.45	226	12930	0.7	0.38
KVF03	315	10460	0.5	0.76	297	17719	0.9	0.55
KVF04	454	12310	0.6	0.22	429	24969	1.3	1.22
KVF06	562	14369	0.7	0.11	542	30979	1.6	0.23
KVF08	627	8760	0.5	0.01	598	34909	1.8	0.29
KVF10	885	23870	1.2	0.1	836	50810	2.6	0.65
KVF12	959	31290	1.6	0.18	917	51639	2.7	0.14

NOTE: Based on 70°F DB EAT, 180°F EWT, 40°F temperature drop, high fan speed.

KVF SERIES

Vertical | Standard



ELECTRIC HEAT FEATURES & CAPACITIES

Krueger offers electric heating coils for specific application with all vertical floor series fan coil units. This allows the flexibility to provide an unrivaled amount of electric heat options in one complete package.

ELECTRIC HEAT STANDARD FEATURES

- ETL listed as an assembly for safety compliance.
- Single point power connection.
- Mounted in reheat position.
- Automatic reset primary and back-up secondary thermal limits.
- Internal wiring rated at 105°C.
- Integral electric heat assembly with removable element for easy service.
- Stainless steel terminals and hardware.
- Finned tubular heater virtually eliminates the risk of shock from accidental contact.



OPTIONAL HEATER CONTROL

- Silent solid state relays on heaters up to 18 amps.
- Door interlocking disconnect switch.
- Main fusing.

ELECTRICAL CALCULATIONS INFORMATION

- Non-fused door interlock disconnect switch shall be sized according to MCA.
- Fused door interlock disconnect switch and main fusing shall be sized according to MOP.

USEFUL FORMULAS

$$kW^* = (CFM \times \Delta T \times 1.085^{**}) / 3413$$

$$1\emptyset \text{ AMPs} = (kW \times 1000) / \text{Volts}$$

$$* \quad 1kW = 3413 \text{ BTU/H}$$

$$** \text{ Capacity at Sea Level}$$

ALTITUDE CONSIDERATIONS:

Reduce by 0.034 for each 1000 ft. of altitude above sea level.

Example:

$$5000 \text{ ft.}/1000 \text{ ft.} = 5$$

$$5 \times 0.034 = 0.17$$

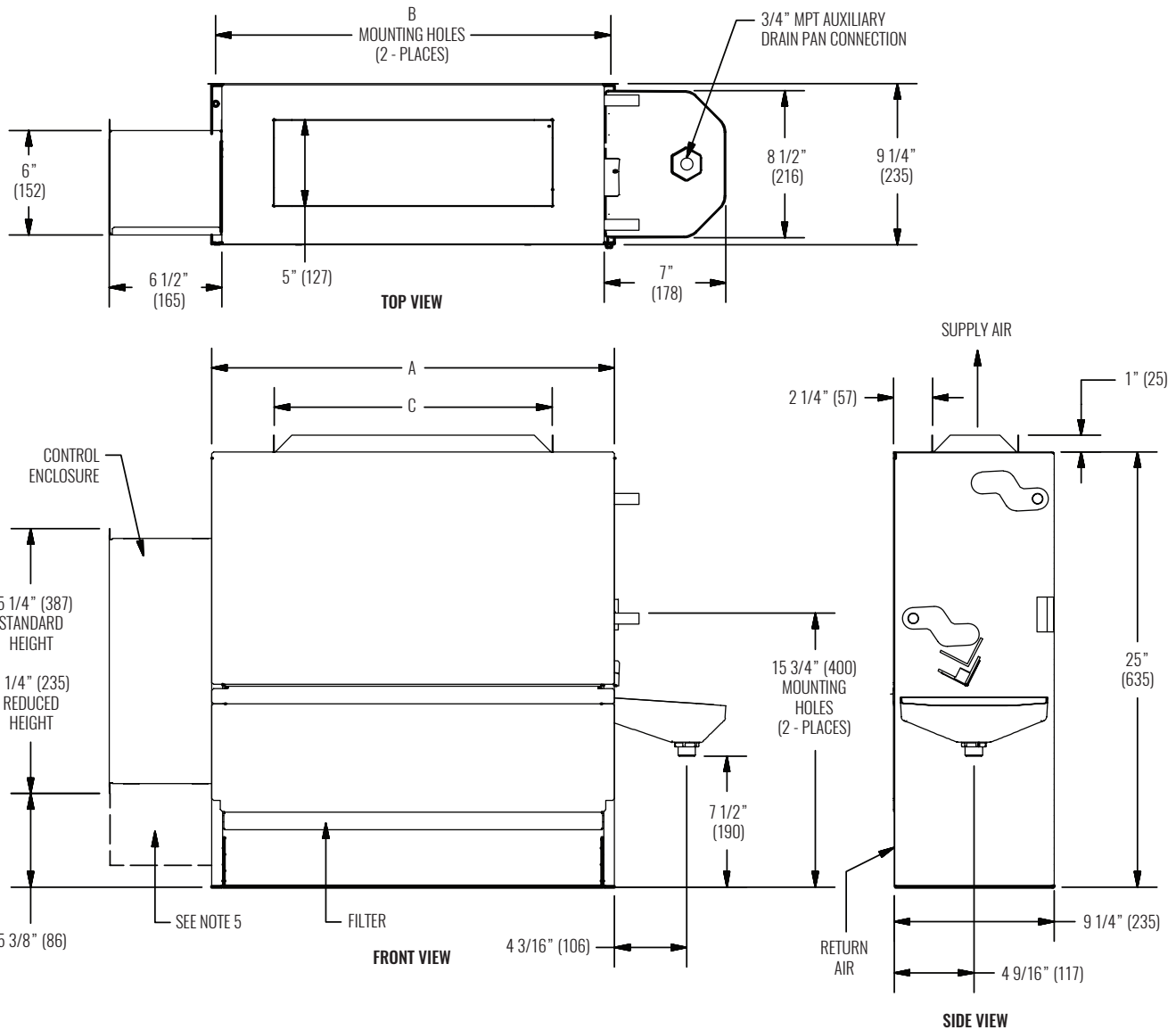
$$1.085 - 0.17 = 0.915$$

ELECTRIC HEAT FEATURES & CAPACITIES (CONTINUED)

UNIT SIZE	MBH	3.4	5.1	6.8	10.2	13.7	17.1	20.5
	kW	1.0	1.5	2.0	3.0	4.0	5.0	6.0
	VOLTS	AMPS						
02	115	8.3	-	-	-	-	-	-
	208	4.8	-	-	-	-	-	-
	230	4.2	-	-	-	-	-	-
	277	3.6	-	-	-	-	-	-
03	115	8.3	12.5	-	-	-	-	-
	208	4.8	7.2	-	-	-	-	-
	230	4.2	6.3	-	-	-	-	-
	277	3.6	5.4	-	-	-	-	-
04	115	8.3	12.5	16.7	-	-	-	-
	208	4.8	7.2	9.6	-	-	-	-
	230	4.2	6.3	8.3	-	-	-	-
	277	3.6	5.4	7.2	-	-	-	-
06	115	8.3	12.5	16.7	25.0	-	-	-
	208	4.8	7.2	9.6	14.4	-	-	-
	230	4.2	6.3	8.3	12.5	-	-	-
	277	3.6	5.4	7.2	10.8	-	-	-
08	115	8.3	12.5	16.7	25.0	-	-	-
	208	4.8	7.2	9.6	14.4	19.2	-	-
	230	4.2	6.3	8.3	12.5	16.7	-	-
	277	3.6	5.4	7.2	10.8	14.4	-	-
10	115	8.3	12.5	16.7	25.0	-	-	-
	208	4.8	7.2	9.6	14.4	19.2	24.0	-
	230	4.2	6.3	8.3	12.5	16.7	20.8	-
	277	3.6	5.4	7.2	10.8	14.4	18.1	-
12	115	8.3	12.5	16.7	25.0	-	-	-
	208	4.8	7.2	9.6	14.4	19.2	24.0	28.9
	230	4.2	6.3	8.3	12.5	16.7	20.8	25.0
	277	3.6	5.4	7.2	10.8	14.4	18.1	21.7

NOTES: Shaded areas of the electric heat selection chart indicate kW and voltage options not available. Available voltages are 1-phase, 60 hertz. Size heater for Leaving Air Temperature (LAT) less than 104°F. Silent, solid state heater relay is available for heater currents less than 18 amps. Ask your local Krueger Representative about continuously modulating electric heat using SSR and special control options.

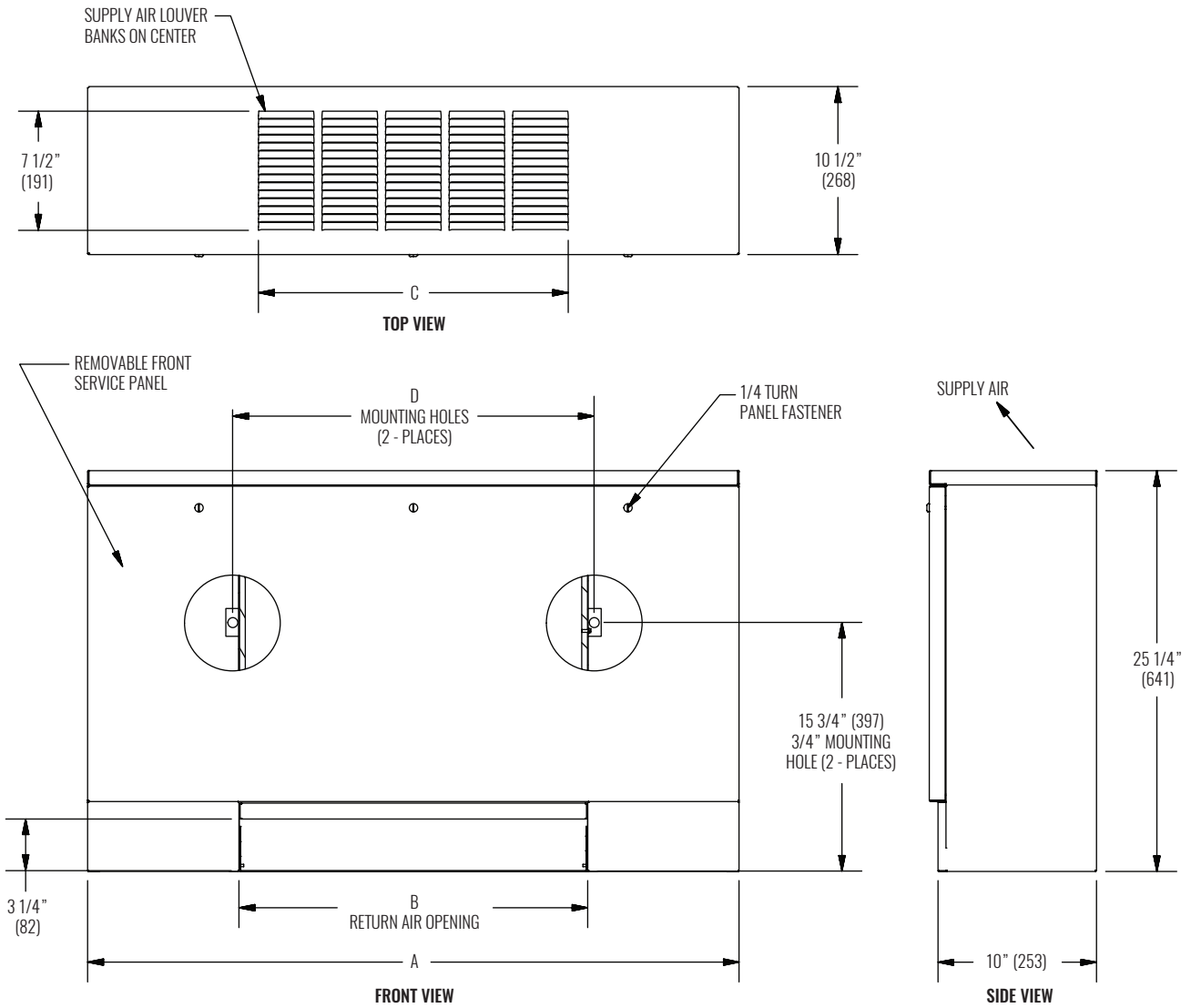
DIMENSIONAL DATA | KVFH



UNIT SIZE	A	B	C
02	23 3/16" (589)	22 3/4" (578)	16" (406)
03	27 3/16" (691)	26 3/4" (679)	20" (508)
04	33 3/16" (843)	32 3/4" (832)	26" (660)
06	43 3/16" (1097)	42 3/4" (1086)	36" (914)
08	45 3/16" (1148)	44 3/4" (1137)	38" (965)
10	59 3/16" (1503)	58 3/4" (1492)	52" (1320)
12	67 3/16" (1707)	66 3/4" (1695)	60" (1524)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6mm). Junction box size and location varies with unit features. Control options may be limited. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances. Reduced height control enclosure is standard with opposite end coils. Right-hand coil connection shown. Left-hand unit is similar, but opposite. Some piping package options may require extended drain pans. Size 2 and 3 with 208/230VAC or 277VAC have a 3 5/8" (92) extended control enclosure.

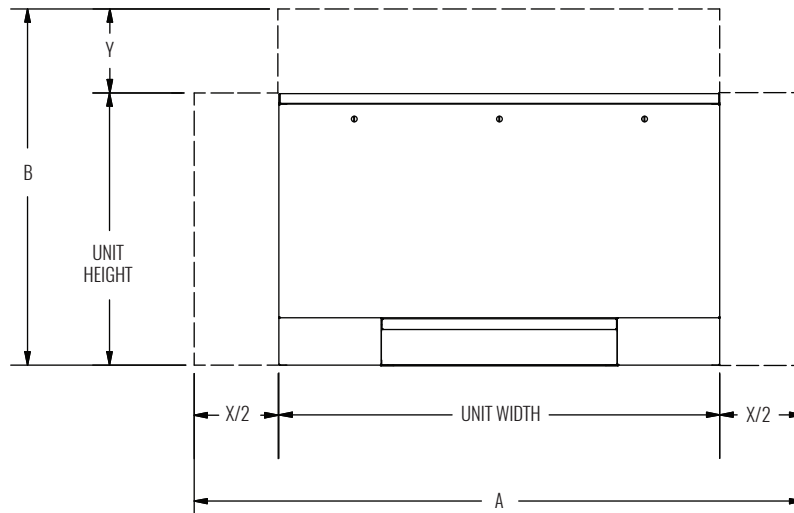
DIMENSIONAL DATA | KVFF



UNIT SIZE	A	B	C	D
02	40" (1016)	22" (559)	19 1/2" (495)	22 3/4" (578)
03	44" (1117)	26" (660)	23 1/2" (597)	26 3/4" (679)
04	50" (1270)	32" (813)	27 1/2" (699)	32 3/4" (832)
06	60" (1524)	42" (1067)	39 1/2" (1003)	42 3/4" (1086)
08	62" (1574)	44" (1118)	39 1/2" (1003)	44 3/4" (1137)
10	76" (1930)	58" (1473)	55 1/2" (1410)	58 3/4" (1492)
12	84" (2133)	66" (1676)	63 1/2" (1613)	66 3/4" (1695)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6mm). Junction box size and location varies with unit features. Control options may be limited. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances. Standard cabinet finish is "Pearl White Satin". Right-hand unit shown, left-hand unit similar, but opposite. Parametric design available to increase Height or Width. (See parametric offerings drawing.) Some control or piping package options may require extended end pockets and/or extended drain pans. (See extended end pocket drawing.) False back extension available.

DIMENSIONAL DATA | KVFF | PARAMETRIC INCREMENTS



DIMENSION A

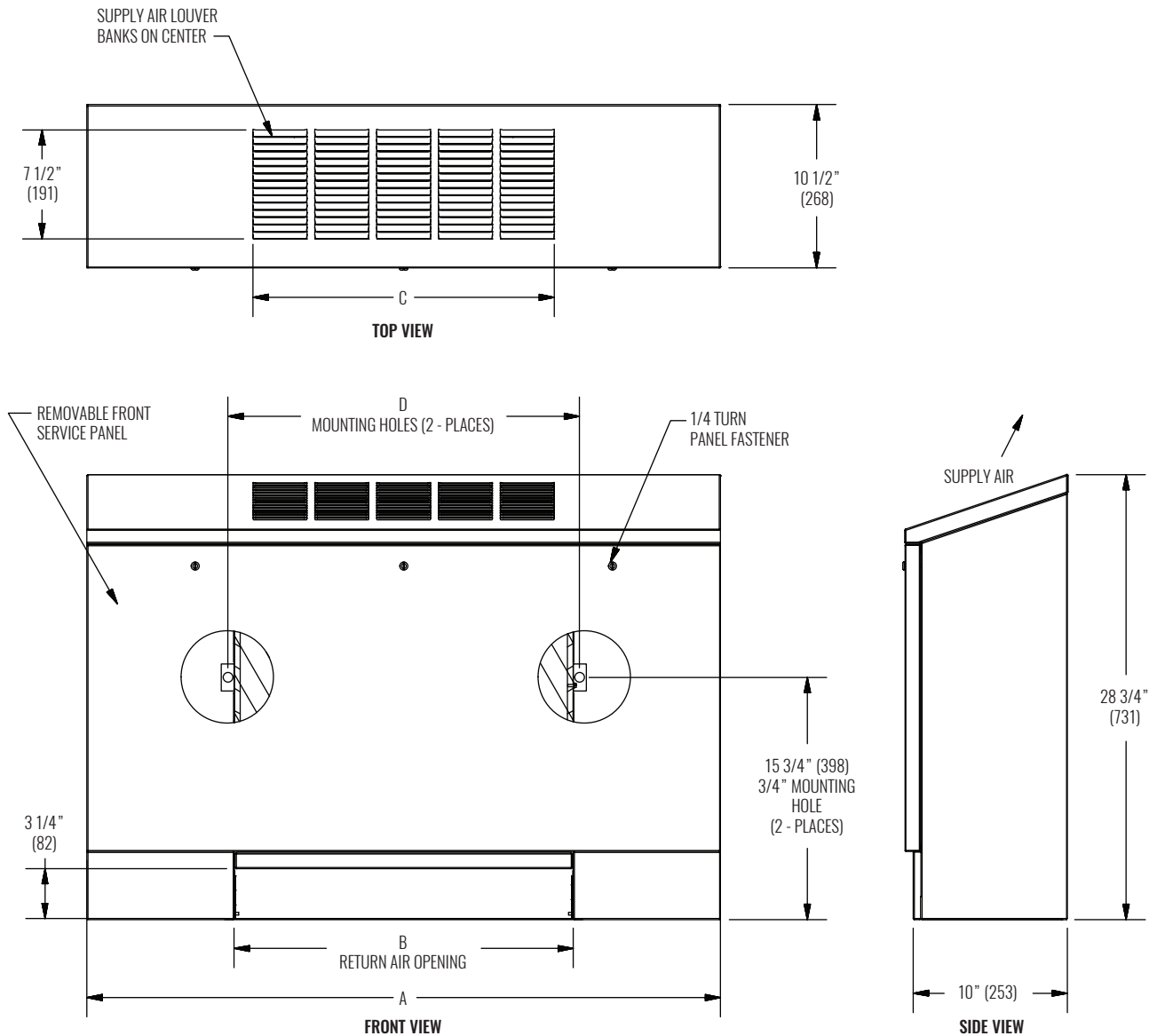
UNIT SIZE	X=0	X=2" (51)	X=3" (76)	X=4" (102)	X=5" (127)	X=6" (152)	X=7" (178)	X=8" (203)	X=9" (229)	X=10" (254)	X=11" (279)	X=12" (305)
02	40" (1016)	42" (1067)	43" (1092)	44" (1118)	45" (1143)	46" (1168)	47" (1194)	48" (1219)	49" (1245)	50" (1270)	51" (1295)	52" (1321)
03	44" (1118)	46" (1168)	47" (1194)	48" (1219)	49" (1245)	50" (1270)	51" (1295)	52" (1321)	53" (1346)	54" (1372)	55" (1397)	56" (1422)
04	50" (1270)	52" (1321)	53" (1346)	54" (1372)	55" (1397)	56" (1422)	57" (1448)	58" (1473)	59" (1499)	60" (1524)	61" (1549)	62" (1575)
06	60" (1524)	62" (1575)	63" (1600)	64" (1626)	65" (1651)	66" (1676)	67" (1702)	68" (1727)	69" (1753)	70" (1778)	71" (1803)	72" (1829)
08	62" (1575)	64" (1626)	65" (1651)	66" (1676)	67" (1702)	68" (1727)	69" (1753)	70" (1778)	71" (1803)	72" (1829)	73" (1854)	74" (1880)
10	76" (1930)	78" (1981)	79" (2007)	80" (2032)	81" (2057)	82" (2083)	83" (2108)	84" (2134)	85" (2159)	86" (2184)	87" (2210)	88" (2235)
12	84" (2134)	86" (2184)	87" (2210)	88" (2235)	89" (2261)	90" (2286)	91" (2311)	92" (2337)	93" (2362)	94" (2388)	95" (2413)	96" (2438)

DIMENSION B

UNIT SIZE	Y=0	Y=2" (51)	Y=3" (76)	Y=4" (102)	Y=5" (127)	Y=6" (152)	Y=7" (178)	Y=8" (203)	Y=9" (229)	Y=10" (254)	Y=11" (279)	Y=12" (305)
ALL SIZES	25 1/4" (641)	27 1/4" (692)	28 1/4" (718)	29 1/4" (743)	30 1/4" (768)	31 1/4" (794)	32 1/4" (819)	33 1/4" (845)	34 1/4" (870)	35 1/4" (895)	36 1/4" (921)	37 1/4" (946)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6mm). Internal chassis and air openings remain the same. External cabinet can increase in height and width in 1" (25.4mm) increments up to 12" (305mm).

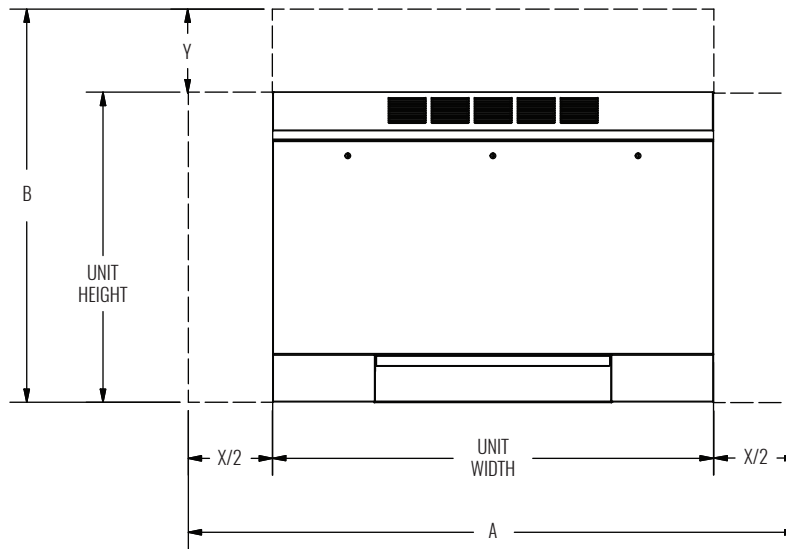
DIMENSIONAL DATA | KVFS



UNIT SIZE	A	B	C	D
02	40" (1016)	22" (559)	19 1/2" (495)	22 3/4" (578)
03	44" (1118)	26" (660)	23 1/2" (597)	26 3/4" (679)
04	50" (1270)	32" (813)	27 1/2" (699)	32 3/4" (832)
06	60" (1524)	42" (1067)	39 1/2" (1003)	42 3/4" (1086)
08	62" (1575)	44" (1118)	39 1/2" (1003)	44 3/4" (1137)
10	76" (1930)	58" (1473)	55 1/2" (1410)	58 3/4" (1492)
12	84" (2134)	66" (1676)	63 1/2" (1613)	66 3/4" (1695)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6mm). Junction box size and location varies with unit features. Control options may be limited. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances. Standard cabinet finish is "Pearl White Satin". Right-hand unit shown, left-hand unit similar, but opposite. Parametric design available to increase Height or Width. (See parametric offerings drawing.) Some control or piping package options may require extended end pockets and/or extended drain pans. (See extended end pocket drawing.) False back extension available.

DIMENSIONAL DATA | KVFS | PARAMETRIC INCREMENTS



DIMENSION A

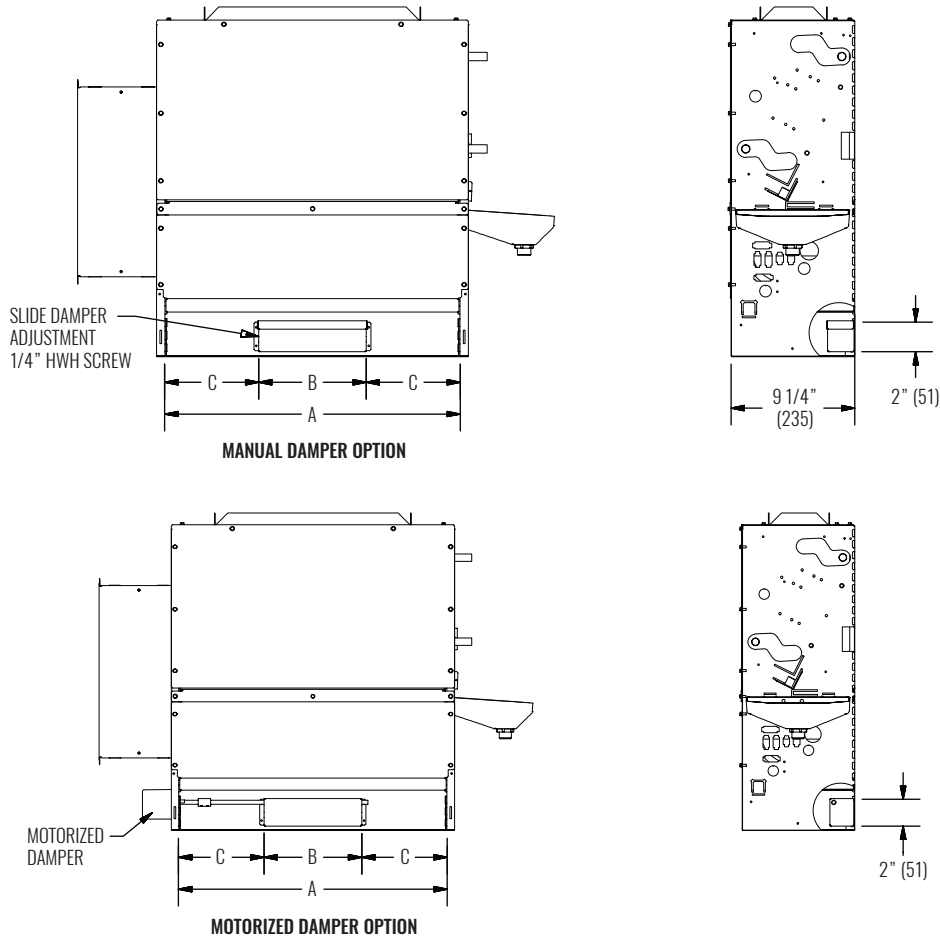
UNIT SIZE	X=0	X=2" (51)	X=3" (76)	X=4" (102)	X=5" (127)	X=6" (152)	X=7" (178)	X=8" (203)	X=9" (229)	X=10" (254)	X=11" (279)	X=12" (305)
02	40" (1016)	42" (1067)	43" (1092)	44" (1118)	45" (1143)	46" (1168)	47" (1194)	48" (1219)	49" (1245)	50" (1270)	51" (1295)	52" (1321)
03	44" (1118)	46" (1168)	47" (1194)	48" (1219)	49" (1245)	50" (1270)	51" (1295)	52" (1321)	53" (1346)	54" (1372)	55" (1397)	56" (1422)
04	50" (1270)	52" (1321)	53" (1346)	54" (1372)	55" (1397)	56" (1422)	57" (1448)	58" (1473)	59" (1499)	60" (1524)	61" (1549)	62" (1575)
06	60" (1524)	62" (1575)	63" (1600)	64" (1626)	65" (1651)	66" (1676)	67" (1702)	68" (1727)	69" (1753)	70" (1778)	71" (1803)	72" (1829)
08	62" (1575)	64" (1626)	65" (1651)	66" (1676)	67" (1702)	68" (1727)	69" (1753)	70" (1778)	71" (1803)	72" (1829)	73" (1854)	74" (1880)
10	76" (1930)	78" (1981)	79" (2007)	80" (2032)	81" (2057)	82" (2083)	83" (2108)	84" (2134)	85" (2159)	86" (2184)	87" (2210)	88" (2235)
12	84" (2134)	86" (2184)	87" (2210)	88" (2235)	89" (2261)	90" (2286)	91" (2311)	92" (2337)	93" (2362)	94" (2388)	95" (2413)	96" (2438)

DIMENSION B

UNIT SIZE	X=0	Y=1" (25)	Y=2" (51)	Y=3" (76)	Y=4" (102)	Y=5" (127)	Y=6" (152)	Y=7" (178)	Y=8" (203)	Y=9" (229)	Y=10" (254)	Y=11" (279)	Y=12" (305)
ALL SIZES	25 1/4" (641)	26 1/4" (667)	27 1/4" (692)	28 1/4" (718)	29 1/4" (743)	30 1/4" (768)	31 1/4" (794)	32 1/4" (819)	33 1/4" (845)	34 1/4" (870)	35 1/4" (895)	36 1/4" (921)	37 1/4" (946)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6mm). Internal chassis and air openings remain the same. External cabinet can increase in height and width in 1" (25.4mm) increments up to 12" (305mm).

DIMENSIONAL DATA | OUTSIDE AIR DAMPERS



UNIT SIZE	A	B	C
02	22" (559)	8" (203)	7" (178)
03	26" (660)	10" (254)	8" (203)
04	32" (813)	12" (305)	10" (254)
06	42" (1067)	14" (356)	14" (356)
08	44" (1118)	18" (457)	13" (330)
10	58" (1473)	27" (686)	15 1/2" (394)
12	66" (1676)	27" (686)	19 1/2" (495)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6). Model KVFH shown; typical for models KVFF and KVFS. Right-hand unit shown; left-hand unit is similar, but opposite. The standard damper options may not provide freeze protection under all conditions and applications. Other forms of freeze protection may be required.

KVF SERIES

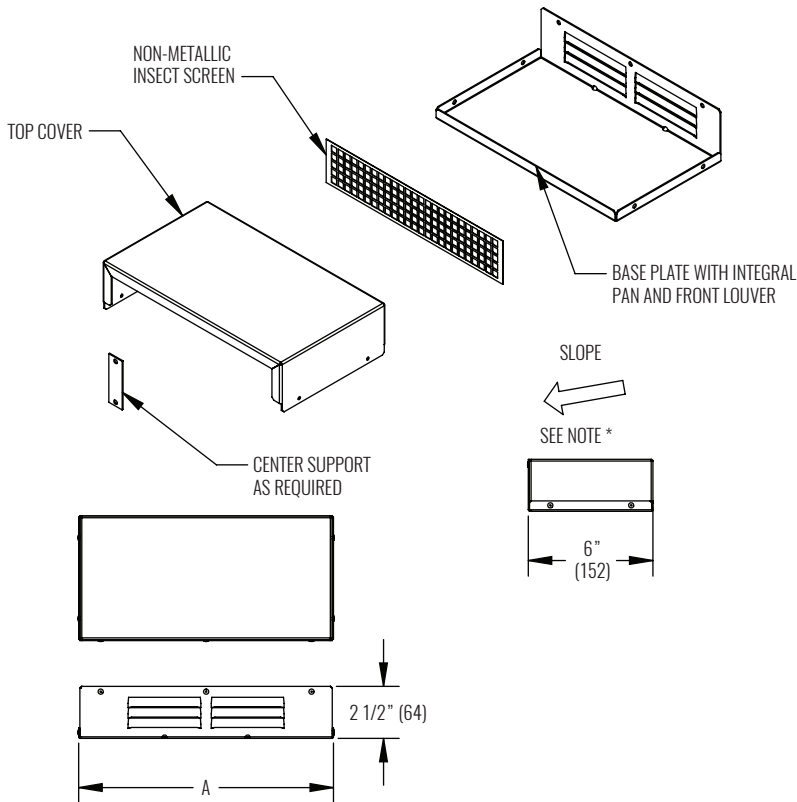
Vertical | Standard



FAN COIL UNITS | VERTICAL, STANDARD

KVF SERIES

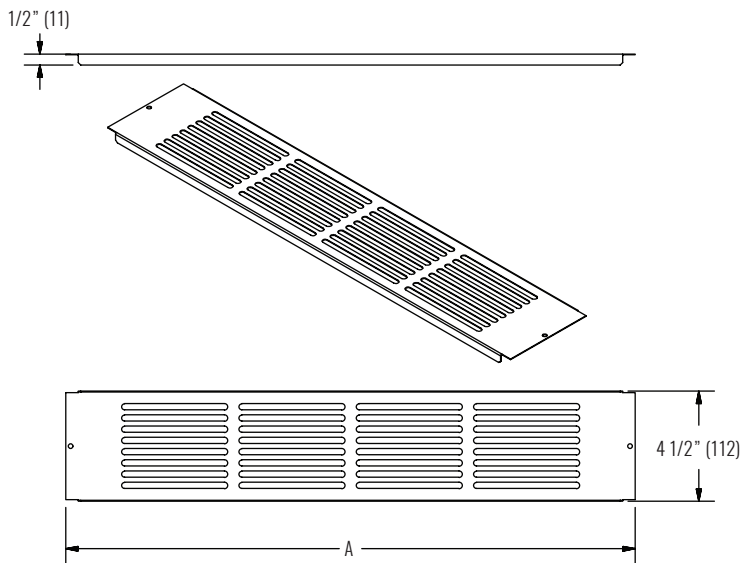
DIMENSIONAL DATA | WALL BOX



UNIT SIZE	A
02	8 1/4" (203)
03	10 1/4" (260)
04	12 1/4" (311)
06	14 1/4" (362)
08	18 1/4" (464)
10	27 1/4" (692)
12	27 1/4" (692)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6). Material is .050" aluminum. Wall box should be installed pitched slightly toward exterior surface of wall. "Weep" holes should not be obstructed when sealing box to the wall.

DIMENSIONAL DATA | RETURN AIR TOE KICK



UNIT SIZE	PART NUMBER	A
02	51-00437-01	22 3/4" (578)
03	51-00437-02	26 3/4" (679)
04	51-00437-03	32 3/4" (832)
06	51-00437-04	42 3/4" (1086)
08	51-00437-05	44 3/4" (1137)
10	51-00437-06	58 3/4" (1792)
12	51-00437-07	66 3/4" (1695)

NOTES: All dimensions are in inches (millimeters) and are +/- 1/4" (6). Typical for KVFF or KVFS models. Return grille is held in place with sheet metal screws.

PERFORMANCE DATA | PSC MOTOR & FAN DATA

UNIT SIZE	FAN SPEED	MOTOR HP (QTY)	# OF FANS	115 VOLTS		208-230 VOLTS		277 VOLTS	
				AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
02	HIGH	(1) 1/50	1	0.40	45	N/A	N/A	0.21	57
	MEDIUM			0.31	35	N/A	N/A	0.19	44
	LOW			0.27	28	N/A	N/A	0.18	40
03	HIGH	(1) 1/30	1	0.55	60	N/A	N/A	0.31	73
	MEDIUM			0.43	48	N/A	N/A	0.26	60
	LOW			0.40	43	N/A	N/A	0.24	54
04	HIGH	(1) 1/20	2	0.62	70	N/A	N/A	0.27	76
	MEDIUM			0.56	61	N/A	N/A	0.21	65
	LOW			0.54	58	N/A	N/A	0.20	58
06	HIGH	(1) 1/20	2	0.71	80	N/A	N/A	0.30	87
	MEDIUM			0.66	74	N/A	N/A	0.26	77
	LOW			0.59	61	N/A	N/A	0.22	64
08	HIGH	(1) 1/10	2	1.03	114	N/A	N/A	0.40	114
	MEDIUM			0.77	81	N/A	N/A	0.28	80
	LOW			0.70	71	N/A	N/A	0.25	70
10	HIGH	(2) 1/20	4	1.18	132	N/A	N/A	0.53	144
	MEDIUM			1.03	114	N/A	N/A	0.42	120
	LOW			0.99	107	N/A	N/A	0.37	106
12	HIGH	(2) 1/20	4	1.26	142	N/A	N/A	0.57	154
	MEDIUM			1.14	126	N/A	N/A	0.45	131
	LOW			1.08	114	N/A	N/A	0.40	114

NOTES: Exposed unit, 3-row coil, no EH, no toe kick, standard throw away panel filter. Data was taken without ductwork. Unit size 04, 06, 08, 10 and 12 data generated at 115v, 277v. Unit size 02 & 03 data generated with 115v, 240v to 120v transformer (230v line voltage) and 277v to 120v transformer (277v line voltage). For FLA, use unit voltage and size at high speed.

KVF SERIES

Vertical | Standard



PERFORMANCE DATA | EC MOTOR & FAN DATA

VERTICAL CONCEALED

UNIT SIZE	FAN SPEED	MOTOR HP (QTY)	# OF FANS	WATTS	115 VOLTS		208-230 VOLTS		277 VOLTS	
					FLA	3-PHASE NEUTRAL	FLA	3-PHASE NEUTRAL	FLA	3-PHASE NEUTRAL
02	HIGH	(1) 1/4	1	58	1.0	1.7	0.6	1.0	0.5	0.9
03	HIGH	(1) 1/4	1	75	1.3	2.3	0.8	1.4	0.7	1.2
04	HIGH	(1) 1/4	2	78	1.3	2.3	0.8	1.4	0.7	1.2
06	HIGH	(1) 1/4	2	144	2.3	4.0	1.4	2.4	1.2	2.1
08	HIGH	(1) 1/4	2	221	3.4	5.9	2.1	3.6	1.7	2.9
10	HIGH	(2) 1/4	4	224	3.6	6.2	2.2	3.8	1.8	3.1
12	HIGH	(2) 1/4	4	283	4.4	7.6	2.6	4.5	2.2	3.8

VERTICAL EXPOSED / SLOPED TOP

UNIT SIZE	FAN SPEED	MOTOR HP (QTY)	# OF FANS	WATTS	115 VOLTS		208-230 VOLTS		277 VOLTS	
					FLA	3-PHASE NEUTRAL	FLA	3-PHASE NEUTRAL	FLA	3-PHASE NEUTRAL
02	HIGH	(1) 1/4	1	60	1.0	1.7	0.6	1.0	0.5	0.9
03	HIGH	(1) 1/4	1	79	1.3	2.3	0.8	1.4	0.7	1.2
04	HIGH	(1) 1/4	2	81	1.3	2.3	0.8	1.4	0.7	1.2
06	HIGH	(1) 1/4	2	142	2.3	4.0	1.4	2.4	1.2	2.1
08	HIGH	(1) 1/4	2	249	3.4	5.9	2.1	3.6	1.7	2.9
10	HIGH	(2) 1/4	4	252	3.6	6.2	2.2	3.8	1.8	3.1
12	HIGH	(2) 1/4	4	357	4.4	7.6	2.6	4.5	2.2	3.8

NOTES: Exposed, 3-row coil, no EH, no toe kick, standard throw away panel filter. Watts as shown are for .05" ESP, 3 row coil, 115/1/60, 12 FPI, and throwaway filters. Motor HP as noted is a nominal rating. Data as supplied is for reference only. For project specific operational points see selection tool report out.

FAN COIL UNITS | VERTICAL, STANDARD

KVF SERIES

PERFORMANCE DATA | SOUND DATA

UNIT SIZE	MOTOR SPEED	TOTAL SOUND POWER LEVEL						
		OCTAVE BAND / CENTER FREQUENCY (HZ)						
		2/125	3/250	4/500	5/1000	6/2000	7/4000	8/8000
02	HIGH	60	65	60	55	50	47	39
	MEDIUM	51	54	47	44	37	27	30
	LOW	44	46	32	29	22	26	28
03	HIGH	60	62	56	54	50	45	38
	MEDIUM	57	57	52	49	45	38	32
	LOW	51	53	47	44	38	29	30
04	HIGH	61	64	63	57	50	48	40
	MEDIUM	59	60	60	52	47	40	34
	LOW	51	56	49	42	34	28	30
06	HIGH	62	64	68	57	48	45	38
	MEDIUM	58	60	65	52	44	39	32
	LOW	51	54	49	40	32	27	30
08	HIGH	68	68	65	61	55	51	45
	MEDIUM	63	62	63	56	51	44	38
	LOW	59	57	56	48	40	33	31
10	HIGH	65	66	70	60	53	51	40
	MEDIUM	61	63	68	59	52	45	38
	LOW	58	59	65	53	45	41	33
12	HIGH	65	66	66	59	52	47	39
	MEDIUM	64	65	66	57	51	45	37
	LOW	57	57	61	49	41	34	31

NOTES: Sound data tested in accordance with AHRI-350-2008. Sound levels expressed in decibels, dB RE: 1 x 10⁻¹² watts. Total sound power level data based on KVFF, exposed cabinet model with fan CFM at corresponding motor tap with 115/1/60 volt PSC motor, 3-row coil, 1" throwaway filter, 0.0" external static pressure and standard rated internal pressure losses.

SUGGESTED SPECIFICATION & CONFIGURATION

GENERAL

Furnish and install Krueger vertical floor direct drive fan coil units where indicated on the plans and in the specifications. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. Units shall be ETL listed in compliance with UL/ANSI Standard 1995, and be certified as complying with AHRI Standard 440-2008.

CONSTRUCTION

All unit chassis shall be fabricated of heavy gauge galvanized steel panels able to meet 125 hour salt spray test per ASTM B-117. All unit chassis panels shall be insulated with Elastomeric Closed Cell Foam Insulation. Insulation shall conform to UL 181 for erosion and NFPA 90A for fire, smoke and melting, and comply with a 25/50 Flame Spread and Smoke Developed Index per ASTM E-84 or UL 723. Additionally, insulation shall comply with Antimicrobial Performance Rating of 0, no observed growth, per ASTM G-21. Polyethylene or Fiberglass insulation is not acceptable.

All exposed units shall have exterior panels fabricated of not less than 20 gauge galvanized steel [provide a 16 gauge front panel on exposed units]. The front panel shall be attached with quarter turn quick open fasteners to allow for easy removal and access for service. [The front panel shall be attached with tamper proof fasteners. Side panels shall be removable for access to controls and piping within the end pockets].

Top panel shall be removable from fan coil without the need to disconnect piping or electrical wiring (KVFF/KVFS). The top panel shall be removed through not more than 8 screws.

[Provide a grille in the return air opening. (KVFF/KVFS).]
[Provide a decorative return air opening (KVFH).]

All exposed units shall include a recessed stamped louver discharge grille. Louver discharge grille shall be reverse stamped (KVFS only). [Provide an architectural grade linear bar discharge grille with a powder coated paint finish to match cabinet color. Liquid coat paint shall not be acceptable.]

All concealed units shall have a minimum 1" duct collar on the discharge.

PAINTED FINISH

All painted cabinet exterior panels shall be finished with a heat cured anodic acrylic powder paint of the standard factory color. Liquid coat paint shall not be acceptable.

SOUND

Units shall have published sound power level data tested in accordance with AHRI Standard 350.

POWER

Units shall not exceed scheduled power consumption.

FAN & MOTOR

Unit fan shall be dynamically balanced, forward curved, DWDI centrifugal type constructed of galvanized steel for corrosion resistance. Motors shall be high efficiency, permanently lubricated sleeve bearing, permanent split capacitor type with UL and CSA listed automatic reset thermal overload protection and three separate horsepower taps. Shaded pole motors are not acceptable. Single speed motors are not acceptable.

The fan/motor assembly shall be removable and serviceable through the front panel. Each fan/motor assembly shall be fastened by no more than 2 screws. The fan/motor assembly shall be no longer than 44", and shall be easily removable by a single service technician. The motors shall have quick connectors to allow service and removal without the need for tools.

DRAIN PAN

Primary condensate drain pans shall be single wall, heavy gauge galvanized steel for corrosion resistance, and extend under the entire coil section. Drain pans shall be of one piece construction and be positively sloped for condensate removal. Drain pan access that requires removal of coils is not acceptable.

The primary drain pan shall be externally insulated with a fire retardant, elastomeric closed cell foam insulation. The insulation shall carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84 and UL 723 and an Antimicrobial Performance Rating of 0, no observed growth, per ASTM G-21. Double wall non-corrosive auxiliary drain pan is used for condensate from primary drain pan and optional valve packages.

Option: Provide a primary drain pan constructed entirely of heavy gauge stainless steel for superior corrosion resistance.

COILS

All cooling and heating coils shall optimize rows to meet the specified capacity. Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Minimum copper tube thickness shall be .016" [.025"].

Fins shall have high efficiency aluminum [copper] surface optimized for heat transfer, air pressure drop and carryover. Lanced fins shall not be acceptable.

All coils shall be tested at 325 PSIG air pressure under water, and rated for a maximum 300 PSIG working pressure at 200°F. Coils shall be circuited for counter flow to maximize unit efficiency.

SUGGESTED SPECIFICATION & CONFIGURATION (CONTINUED)

All water coils shall be designed to connect with ½" nominal pipe connections.

Coils shall be fabricated from galvanized steel [stainless steel].

Heating coils shall be furnished in the pre-heat or re-heat position.

Direct expansion cooling coils shall be factory sealed and charged with minimum 25 PSIG nitrogen or refrigerated dry air.

All water coils shall be provided with a manual air vent fitting to allow for coil venting.

FILTERS

All units shall be furnished with a minimum 1" nominal glass fiber throwaway (1" pleated MERV 8) (1" pleated MERV 13) filter. Filters shall be tight fitting to prevent air bypass. Filters shall be easily removable from the return air opening without the need for tools.

ELECTRICAL

Units shall be furnished with single point power connection. Provide an electrical junction box for motor and other electrical terminations.

Option: Provide 24 VAC fan relay board with 25 VA transformer. Fan relay board designed to operate in conjunction with factory provided (field provided) 24V thermostat. Fan relay board designed to accept 115, 208, 220, 230, or 277 V input power. Fan relay board to be factory installed.

Relay board shall operate with generic thermostat designed to control up to three independently energized fan speeds.

ELECTRIC HEAT

Furnish an electric resistance heating assembly as an integral part of the fan coil unit, with the heating capacity, voltage and kilowatts scheduled. The heater assembly shall be rated for installation on the fan coil unit and be located so as not to expose the fan assembly to excessive leaving air temperatures that could affect motor performance.

The heater and unit assembly shall be listed for zero clearance and meet all NEC requirements, and be ETL listed with the unit as an assembly in compliance with UL/ANSI Standard 1995.

All heating elements on floor mounted units shall be finned tubular type. Elements shall be constructed of nickel chromium resistance wire centered in tubes and embedded in refractory material. Terminals shall be sealed with silicone rubber to protect against moisture. Terminals and hardware shall be stainless steel for corrosion resistance. All internal wiring shall be rated for 105°C minimum.

All heaters shall include over temperature protection consisting of an automatic reset primary thermal limit and back-up secondary thermal limit. All heaters shall be single stage.

Option: Devices used to energize and de-energize (switch) electric heat must be totally silent. Magnetic, mercury, and/or quiet relays and/or contactors are not acceptable.

PIPING PACKAGES

Provide a standard factory assembled valve piping package to consist of a 2-way or 3-way, on/off, motorized electric control valve and two ball isolation valves.

Control valves shall be piped normally closed to the coil. Control valves shall be wired to relay board through quick connects to allow service and replacement of valves. Quick connects shall prevent incorrect wiring through physical and color coded visual confirmation. Maximum entering water temperature on the control valve shall be 200°F, and maximum operating pressure shall be 300 PSIG.

Unions shall be provided to allow removal of piping package from unit without the need for brazing or cutting pipe.

Option: Provide 3-wire floating point modulating control valve (fail-in-place), in lieu of standard 2-position control valve with factory assembled valve piping package.

Option: Provide high pressure close-off actuator for 2-way on/off control valve. Maximum close-off pressure is 50 PSIG (1/2"), 25 PSIG (3/4"), or 20 PSIG (1").

Option: Provide either a fixed or adjustable flow control device for each piping package.

Option: Provide pressure-temperature ports (P/T) for each piping package to allow measurement across the coil.

Piping packages shall be completely factory assembled, including interconnecting pipe and shipped loose for field installation.

Option: Piping package will be shipped factory installed.

OUTSIDE AIR DAMPER

Provide a manual or 2-position motorized outside air damper integral to the unit.

Option: Provide aluminum outside air wall box with integral insect screen and weep holes for field installation.

SUGGESTED SPECIFICATION & CONFIGURATION (CONTINUED)

1. **SERIES: (XXX)**
 KVFF - Vertical Fan Coil, Flat Top
 KVFH - Vertical Fan Coil, Concealed Floor
 KVFS - Vertical Fan Coil, Slant Top
2. **SIZE: (XX)**
 02, 03, 04, 06, 08, 10, 12
3. **MOTOR: (X)**
 A - 115/1/60 - PSC
 B - 208/1/60 - PSC
 C - 230/1/60 - PSC
 E - 277/1/60 - PSC
 F - 115/1/60 - ECM
 G - 208/1/60 - ECM
 H - 230/1/60 - ECM
 K - 277/1/60 - ECM
 L - 220/1/50 - ECM
4. **MOTOR CONTROL: (X)**
 0 - None
 A - 3-Speed Adjustable
 B - 2-10 VDC
 C - 3-Speed Fixed
5. **COIL 1: (X)**
 A - 2-Row Cold Water
 B - 3-Row Cold Water
 C - 4-Row Cold Water
 D - 2-Row DX
 E - 3-Row DX
 F - 4-Row DX
 G - 1-Row Hot Water, Same End Connection
 H - 2-Row Hot Water, Same End Connection
 L - 1-Row Hot Water
 M - 2-Row Hot Water
 P - 2-Row with Changeover
 R - 3-Row with Changeover
 S - 4-Row with Changeover
6. **COIL 1 FPI: (X)**
 10 - 10 FPI
7. **COIL 1 TUBE WALL: (X)**
 1 - 0.016" Tube Wall Thickness
8. **COIL 1 HAND: (X)**
 L - Left-Hand
 R - Right-Hand
9. **COIL 1 AIR VENT: (X)**
 1 - Manual Air Vent
 2 - Auto Air Vent
10. **COIL 1 REFRIGERANT TYPE: (X)**
 4 - R-410
11. **COIL 1 DISTRIBUTOR: (XXX)**
 (See Krueger's selection software.)
12. **COIL 1 PIPING SIZE: (X)**
 H - 1/2"
13. **COIL 1 PIPING PACKAGE: (XX)**
 0 - None
 A - 2-Way Control Valve
 B - 3-Way Control Valve
14. **COIL 1 BALANCING VALVE: (XX)**
 0 - None
 M - Manual Balancing Valve for 3-Way
15. **COIL 1 FLOW CONTROL: (XX)**
 00 - Provided by Others 1/2" Valve Package
 24 - MBV with MS
 25 - MBV with MS, Fixed Flow Control
 29 - MBV with MS, Adjustable Flow Circuit Setter
 36 - MBV with MS
 37 - MBV with MS, Fixed Flow Control
 41 - MBV with MS, Adjustable Flow Circuit Setter
16. **COIL 1 FIXED GPM: (X)**
 (See Krueger's selection software.)
17. **COIL 1 Y-STRAINER: (XX)**
 0 - None
 Y - Y-Strainer with Blowdown
18. **COIL 1 UNIONS: (X)**
 0 - None
 U - Union
19. **COIL 1 P/T PORTS: (X)**
 0 - None
 P - P/T Port
20. **COIL 1 AQUASTAT BLEED LINE: (X)**
 0 - None
 A - Aquastat Bleed Line
21. **COIL 1 ACTUATOR TYPE: (X)**
 0 - None
 1 - Factory Provided 2-Position Close-Off, NC
 2 - MV, 2-Way, Floating Point, Fail-In-Place, 24V
 3 - MV, 3-Way, Floating Point, Fail-In-Place, 24V
 4 - HP Close-Off Actuator, 2-Way Valve-24V
 Note: MV = Modulating Valves, HP = High Pressure
22. **COIL 1 PIPING FACTORY MOUNT: (X)**
 0 - None (Shipped Loose)
 M - Piping Package Mounted at Factory

SUGGESTED SPECIFICATION & CONFIGURATION (CONTINUED)
23. ELECTRIC HEAT VOLTAGE: (X)

- 0 - None
- A - 115 Volt, 1-Phase, 1-Stage
- D - 208 Volt, 1-Phase, 1-Stage
- G - 230 Volt, 1-Phase, 1-Stage
- K - 277 Volt, 1-Phase, 1-Stage

24. kW: (XX)

(See Krueger's selection software.)

25. SILENT RELAY: (X)

- 0 - None
- S - Silent Relay

26. MANUAL RESET: (X)

- 0 - None
- M - Manual Reset

27. COIL 2 SELECTIONS

(See Coil 1 options. Differences may apply.)

28. COIL CASING: (X)

- 1 - Galvanized Coil Casing
- 2 - Stainless Steel Coil Casing

29. FILTER: (X)

- 0 - 1" Throwaway Filter
- E - 1" MERV 8 Filter
- T - 1" MERV 13 Filter

30. SPARE FILTER: (X)

(See Krueger's selection software.)

31. 16 GAUGE FRONT PANEL: (X) (KVFF/KVFS Only)

- Y - Unit with 16 Gauge Front Panel
- N - Unit without 16 Gauge Front Panel

32. LEVELING LEGS: (X)

- 0 - None
- L - Leveling Legs

**33. ADDITIONAL HEIGHT AND WIDTH: (X)
(KVFF/KVFS Only)**

(See Krueger's selection software.)

34. EXTENDED END POCKET: (X) (KVFF/KVFS Only)

- 00 - None
- RE - Right-Hand Extended End Pocket
- LE - Left-Hand Extended End Pocket

35. FALSEBACK: (X) (KVFF/KVFS Only)

- 0 - None
- 2 - 2" Falseback
- 4 - 4" Falseback
- 6 - 6" Falseback
- 8 - 8" Falseback

**36. TAMPER PROOF FASTENERS: (X)
(KVFF/KVFS Only)**

- 0 - None
- T - Tamper Proof Fasteners

37. UNIT DRAIN PAN: (X)

- 0 - Galvanized Drain Pan
- S - Stainless Steel Unit Drain Pan

38. AUXILIARY DRIP PAN: (X)

- 0 - Plastic, Double Wall
- 1 - Plastic (For Units with End Pocket)
(KVFF/KVFS Only)
- 2 - Stainless Steel, for units with End Pocket
(KVFF/KVFS Only)

39. BASIC CONTROL PACKAGE: (X)

- 0 - Line Voltage with Electric Heat (EH)
- 1 - Line Voltage
- 2 - 24V, Unit S/S Relay, Fan Op. Relay, Trans.
- 3 - 24V, Unit S/S Relay, Fan Op. Relay, Trans. with EH

40. THERMOSTAT LOCATION: (X)

- R - Remote Mounted T-Stat
- U - Unit Mounted T-Stat (KVFF/KVFS Only)
- 0 - None

41. THERMOSTAT: (XXXX)
N or F Series: BACnet or Standalone

- N03H - 2P, HO, N, ON/OFF, HML, N
- N03C - 2P, CO, N, ON/OFF, HML, N
- 0N05 - 2P, H/C, A, ON/OFF, HML, Y
- 0N07 - 2P, H/C w/AUX H, A, ON/OFF, HML, Y
- 0N08 - 2P, C w/EH, A, ON/OFF, HML, N
- 0N11 - 4P, H/C, A, ON/OFF, HML, N
- F03H - 2P, HO, N, ON/OFF, HML, N
- F03C - 2P, CO, N, ON/OFF, HML, N
- 0F05 - 2P, H/C, A, ON/OFF, HML, Y
- 0F07 - 2P, H/C w/AUX H, A, ON/OFF, HML, Y
- 0F08 - 2P, C w/EH, A, ON/OFF, HML, N
- 0F11 - 4P, H/C, A, ON/OFF, HML, N

P- Series: 7-Day Programmable

- P03H - 2P, HO, N, H/OFF, AHMLO, N
- P03C - 2P, CO, N, C/OFF, AHMLO, N
- 0P05 - 2P, H/C, A, H/OFF/C/A, AHMLO, Y
- 0P06 - 2P, H/C w/AUX H, A, H/OFF/C/A, AHMLO, Y
- 0P08 - 2P, C w/EH, A, H/OFF/C/A, AHMLO, N
- 0P11 - 4P, H/C, A, H/OFF/C/A, AHMLO, N

D- Series: Digital

- D03H - 2P, HO, N, H/OFF, AHMLO, N
- D03C - 2P, CO, N, C/OFF, AHMLO, N
- 0D05 - 2P, H/C, A, H/OFF/C/A, AHMLO, Y
- 0D06 - 2P, H/C w/AUX H, A, H/OFF/C/A, AHMLO, Y
- 0D08 - 2P, C w/EH, A, H/OFF/C/A, AHMLO, N
- 0D11 - 4P, H/C, A, H/OFF/C/A, AHMLO, N

(See Krueger's website for more information.)

SUGGESTED SPECIFICATION & CONFIGURATION (CONTINUED)

42. AQUASTAT: (X)

- 0 - None
- A - Aquastat

43. FAN SPEED CONTROLLER: (X)

- 0 - None
- F - SCR Fan Speed Controller

44. DISCONNECT SWITCH: (X)

- 0 - None
- L - Door Interlocking non-Fused Disconnect
- T - Toggle Disconnect Switch

45. MAIN FUSING: (X)

- 0 - None
- M - Main Fusing

46. FLOAT SWITCH: (X)

- 0 - None
- D - Drain Pan Float Switch

47. SPEED SWITCH: (X)

- 0 - None
- U - Unit Mount 3-Speed Switch with Off Position
- R - Remote Mount 3-Speed Switch with Off Position

48. RETURN AIR: (X)

- 0 - Open Toe Space
- S - Stamped Louver Toe Kick Grille (KVFF/KVFS Only)

49. SUPPLY AIR: (X)

- C - Duct Collar (KVFH Only)
- S - Stamped Louver Grille
- L - Aluminum Linear Bar Grille

50. OUTSIDE AIR: (X)

- 0 - None
- 1 - Manual Outside Air Damper
- 2 - Motorized Outside Air Damper

51. WALL BOX: (X)

- 0 - None
- W - Wall Box

52. PAINT: (X)

- 0 - Pearl White Satin
- 1 - British White

53. WALL RECESSING PANEL: (X) (KVFH Only)

- 0 - None
- 1 - Stamped Return, STD Length
- 2 - Stamped Return, EXT Length - Left
- 3 - Stamped Return, EXT Length - Right
- 4 - Stamped Return and Supply, STD Length
- 5 - Stamped Return and Supply, STD Length - Left
- 6 - Stamped Return and Supply, STD Length - Right

54. FM DDC MANUFACTURER: (X)

- 0 - None
- 6 - Johnson Controls

55. FM DDC MODEL: (XX)

- 00 - None
- 01 - FEC 1610

56. FM CONTROL ENCLOSURE: (XX)

- 0 - None
- 1 - Control Enclosure