

Product Data

INDUSTRY LEADING FEATURES / BENEFITS

A PERFECT BALANCE BETWEEN BUDGET LIMITS, ENERGY SAVINGS AND COMFORT.

The **38MARB** series ductless systems are a matched combination of an outdoor condensing unit and an indoor fan coil unit connected only by refrigerant tubing and wires.

The ductless system permits creative solutions to design problems such as:

- Add-ons to current space (an office or family room addition)
- Special space requirements
- When changes in the load cannot be handled by the existing system
- When adding air conditioning to spaces that are heated by hydronic or electric heat and have no ductwork
- Historical renovations or any application where preserving the look of the original structure is essential.

The ideal compliment to your ducted system when it is impractical or prohibitively expensive to use ductwork.

The compact indoor fan coil units take up very little space in the room and do not obstruct windows. The fan coils are attractively styled to blend with most room decors. Advanced system components incorporate innovative technology to provide reliable cooling performance at low sound levels.



Fig. 1 —Sizes 06K - 36K

NOTE: Images are for illustration purposes **only**. Actual models may differ slightly.

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Inverter Technology

The inverter driven compressor is designed to run at various input power frequencies (Hz) which controls the compressor's motor speed.

Even Temperature – The control package, including the inverter, monitors the outdoor and indoor temperatures as they relate to the selected indoor set point and adjusts the compressor speed to match the load and keep the system operating continuously rather than cycling and creating temperature swings. This translates to higher comfort levels for the occupants.

Rapid Pull Down/Warm-Up – Comfort is increased by the inverter system's ability to ramp up the compressor speed enabling the system to reach the user selected room temperature set point quicker.

Humidity Control – Running the system for longer periods and continuously varying the compressor speed enhances the humidity control.

Individual Room Comfort

Maximum comfort is provided because each space can be controlled individually based on the usage pattern.

Low Sound Levels

When noise is a concern, ductless systems are the answer. The indoor units are whisper quiet. There are no compressors indoors, either in the conditioned space or directly over it, and there is none of the noise usually generated by air being forced through the ductwork.

When sound ordinances and proximity to neighbors demand quiet operation, the **38MARB** unit is the right choice. With the inverter technology, these units run at lower speeds most of the time resulting in reduced sound levels.

Inverter Technology – Enhanced Economical Operation

Ductless systems are inherently economical to operate. Individual rooms are heated or cooled only when required, and since the air is delivered directly to the space, there is no need to use additional energy to move the air in the ductwork. This economical operation is enhanced further when the inverter system output matches the load resulting in a more efficient system.

Easy-To-Use Controls

The systems have microprocessor-based controls to provide the ultimate in comfort and efficiency. The user friendly wired and wireless remote controls provide the interface between the user and the unit.

Secure Operation

If security is an issue, outdoor and indoor units are connected only by refrigerant piping and wiring to prevent intruders from crawling through ductwork or wall openings. In addition, since the **38MARB** can be installed close to an outside wall, coils are protected from vandals and severe weather.

Fast Installation

This compact ductless system is simple to install. Only wires and piping need to run between the indoor and outdoor units. These units are fast and easy to install ensuring minimal disruption to customers in homes or the workplace. This makes the **38MARB** systems the equipment of choice for retrofit applications.

Simple Servicing and Maintenance

Removing the top panel of the outdoor unit provides immediate access to the control compartment, providing the service technician access to the diagnostic LEDs to facilitate the troubleshooting process. In addition, the draw-thru design of the outdoor unit means that dirt accumulates on the outside surface of the coil. Coils can be cleaned quickly from the inside using a pressure hose and detergent.

On the indoor units, service and maintenance expense is reduced due to the permanent easy to clean filters. Also, error codes are displayed on the front panel to alert the user to certain system malfunctions.

Built-in Reliability

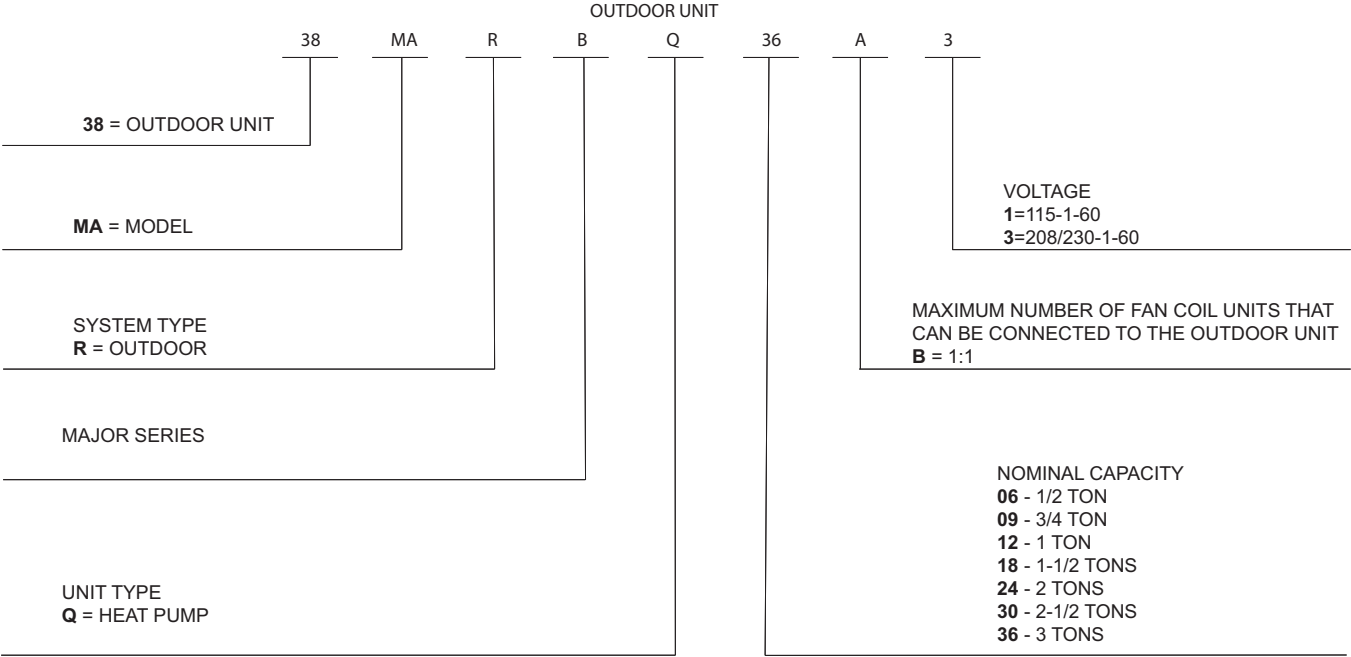
Ductless system indoor and outdoor units are designed to provide years of trouble-free operation. Both the indoor and outdoor units are well protected. Whenever the microprocessor detects abnormal conditions, the unit stops and an error code appears.

Inverter systems provide additional reliability due to the soft start. This refers to the ability of the inverter to start the compressor motor using reduced voltage and reduced current. This feature is beneficial from an electrical standpoint (eliminates current spikes) as well as an overall reliability standpoint due to reduced stress on all associated system components.

Agency Listings

All systems are listed with AHRI (Air conditioning, Heating, and Refrigeration Institute) and are UL certified per UL 60335-2-40 standard.

MODEL NUMBER NOMENCLATURE



Use of the AHRI Certified
TM Mark indicates a
manufacturer's
participation in the
program For verification
of certification for individual
products, go to
www.ahrirectory.org.



STANDARD FEATURES AND ACCESSORIES

Ease Of Installation	
Low Voltage Controls	S
Comfort Features	
Microprocessor Controls	S
Auto Restart Function	S
Auto Changeover	S
Energy Saving Features	
Inverter Driven Compressor	S
46° F Heating Mode (Heating Setback)	S
Safety And Reliability	
3 Minute Time Delay For Compressor	S
High Compressor Discharge Temperature	S
Low Voltage Protection	S
Compressor Overload Protection	S
Compressor Over Current Protection	S
IPM Module Protection	S
Condenser High Temp Protection in Cooling Mode	S
Aluminum Hydrophilic pre-coated fins	S
Ease Of Service And Maintenance	
Diagnostics	S
Liquid Line Pressure Taps	S
Application Flexibility	
Crankcase Heater	S
Base pan Heater	S

Legend

- S - Standard
- A - Accessory

Accessories

Outdoor Unit Model Number	Base Pan Base Rubber Plugs RCD Part No.	Quantity per Unit
38MARBQ12AA1 38MARBQ06AA3 38MARBQ09AA3 38MARBQ12AA3	12600801A00077	13
38MARBQ18AA3	12600801A00077	25
38MARBQ24AA3 38MARBQ30AA3 38MARBQ36AA3	12600801A00117	5

NOTE: The base pan is built in with multiple holes for proper draining during the defrost process. For applications where it is required to seal these holes, and re-direct the condensate drain, rubber plugs are available through RCD.

Outdoor Units

Crankcase Unit

The crankcase heater is standard on all unit sizes. Heater clamps must be placed around the compressor oil stump.

Base pan Heater

The base pan heater is standard on all unit sizes.

DIMENSIONS

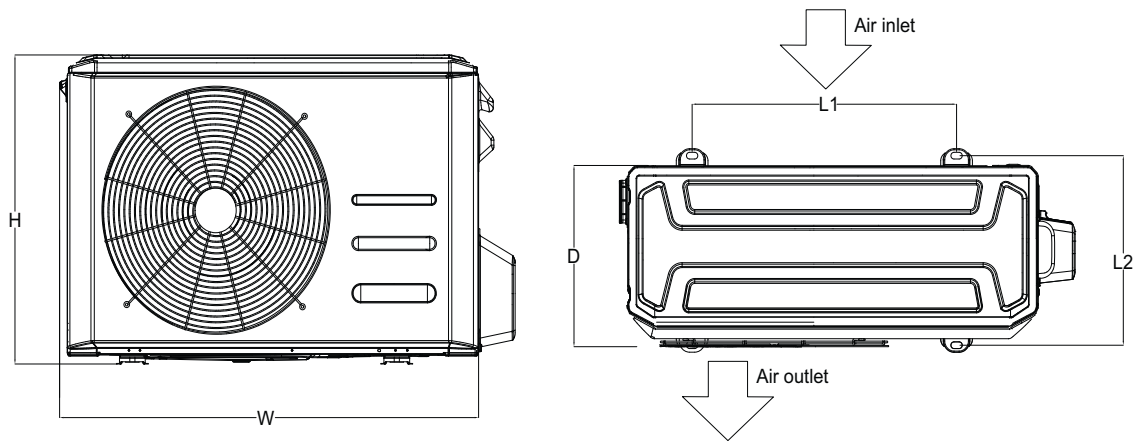


Fig. 2 — Outdoor Unit

UNIT SIZES		12K	6K	9K	12K	18K	24K	30K	36K
VOLTAGES		115V	208/230V	208/230V	208/230V	208/230V	208/230V	208/230V	208/230V
HEIGHT (H)	IN (MM)	21.85 (555)	21.85 (555)	21.81 (554)	21.81 (554)	26.50 (673)	31.89 (810)	31.89 (810)	31.89 (810)
WIDTH (W)	IN (MM)	30.12 (765)	30.12 (765)	31.69 (805)	31.65 (805)	35.04 (890)	37.24 (946)	37.24 (946)	37.24 (946)
DEPTH (D)	IN (MM)	11.93 (303))	11.93 (303))	12.99 (330)	12.99 (330)	13.46 (342)	16.14 (410)	16.14 (410)	16.14 (410)
L1	IN (MM)	17.81 (452)	17.81 (452)	20.10 (511)	20.10 (511)	26.10 (663)	26.50 (673)	26.50 (673)	26.50 (673)
L2	IN (MM)	11.25 (286)	11.25 (286)	12.50 (317)	12.50 (317)	13.70 (347)	15.85 (403)	15.85 (403)	15.85 (403)
OPERATING WEIGHT	LBS (KG)	66.80 (30.30)	63.71 (28.9)	74.10(33.60)	73.60 (33.40)	101.0 (45.80)	134.50 (61)	141.80 (64.3)	150.10 (68.10)

DIMENSIONS (CONT)

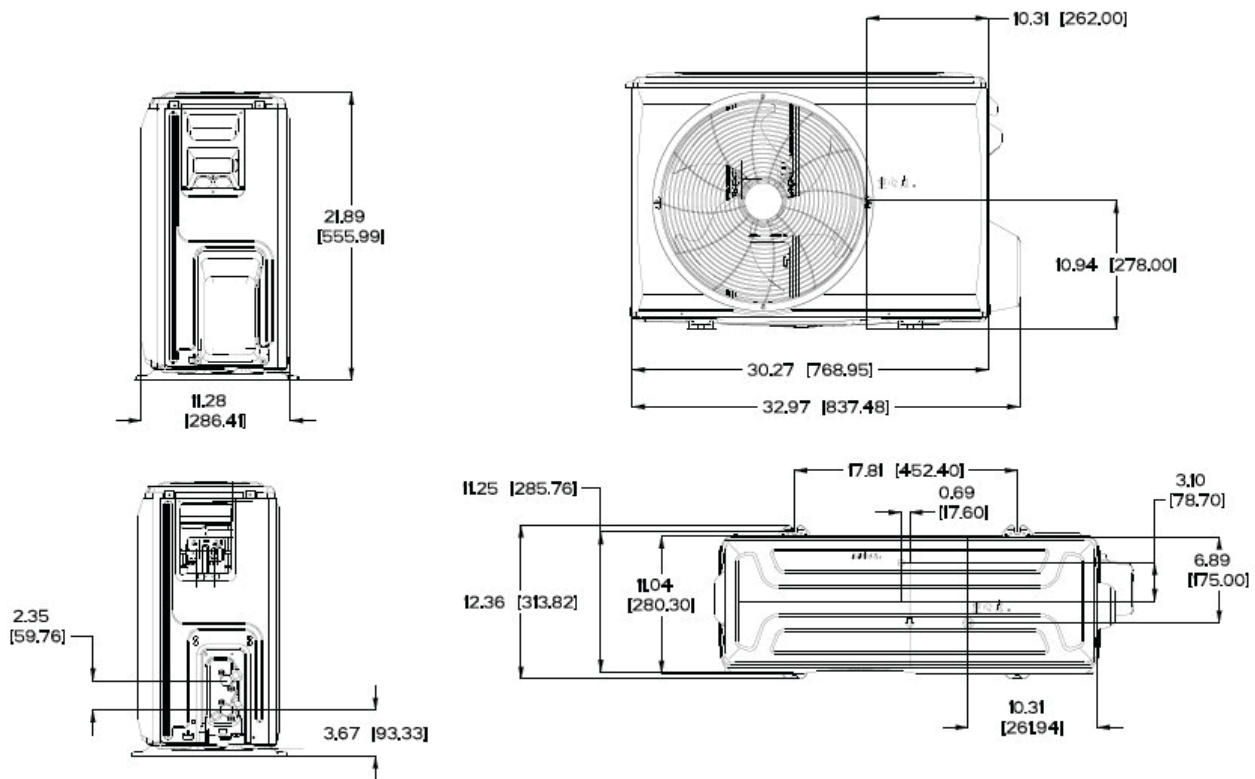


Fig. 3 — Dimension Sizes 12K (115V) and 6K (208/230V)

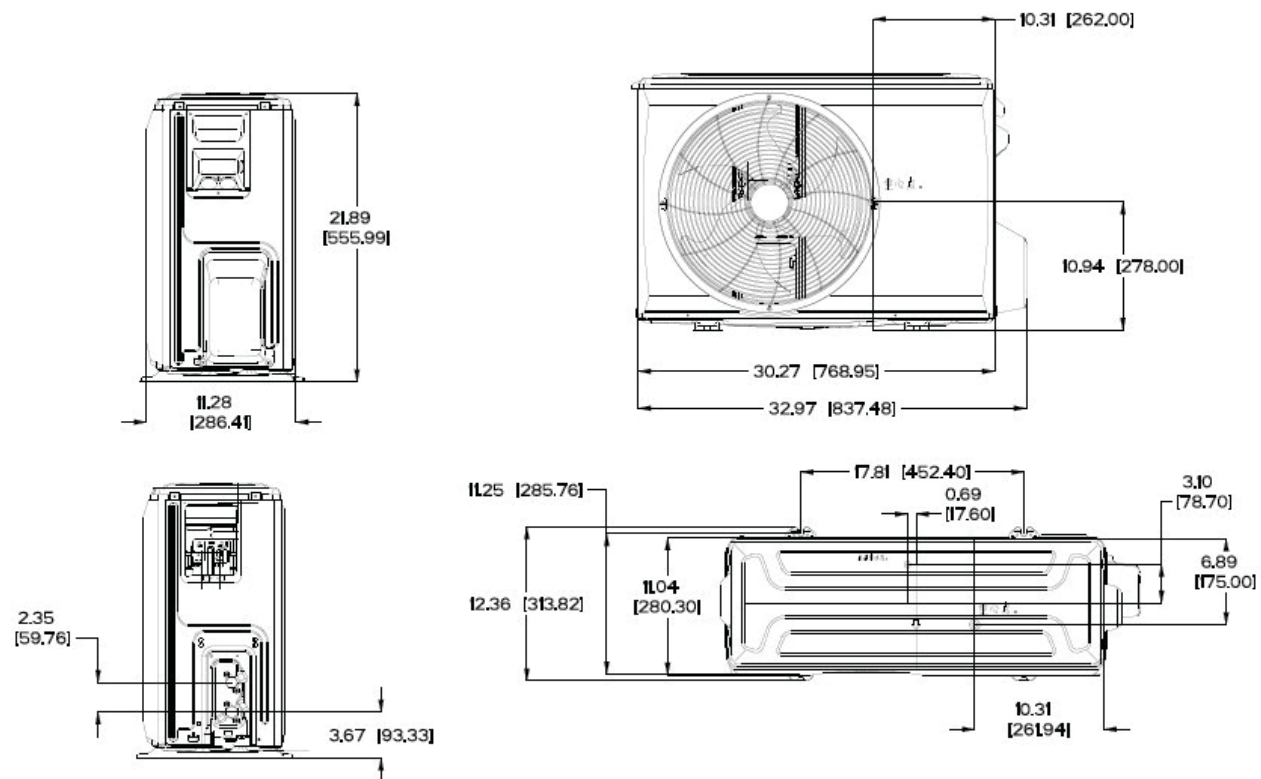


Fig. 4 — Dimension Sizes 09K-12K

DIMENSIONS (CONT)

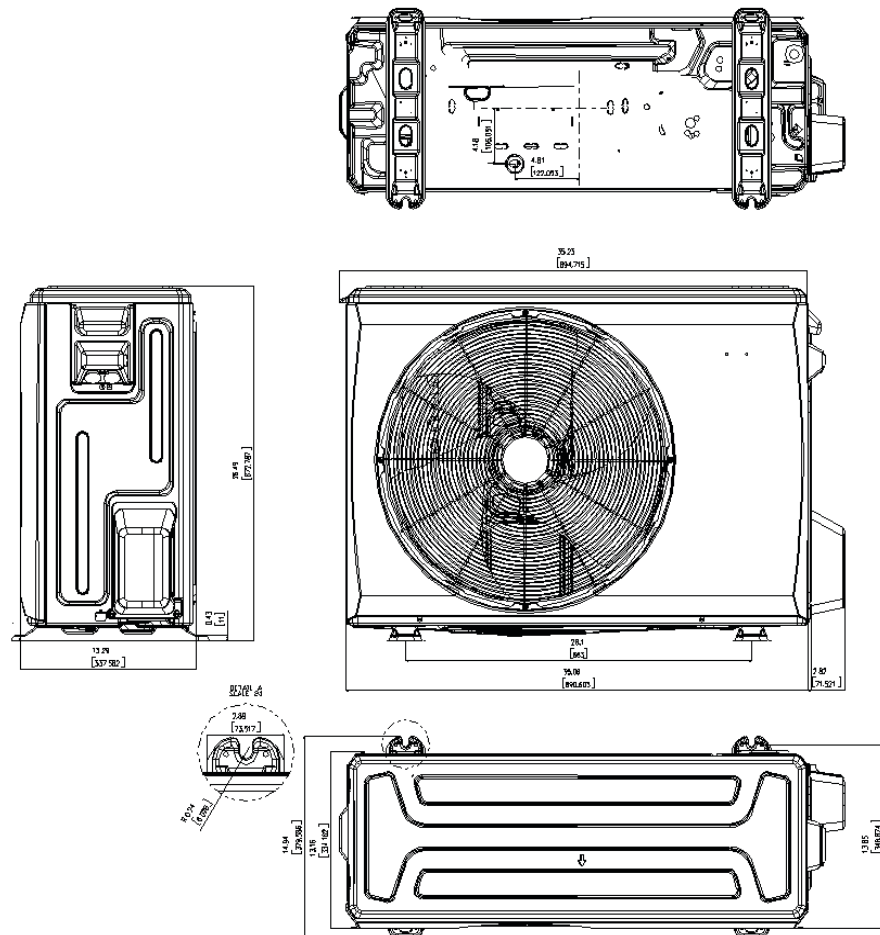


Fig. 5 — Dimension Size 18K

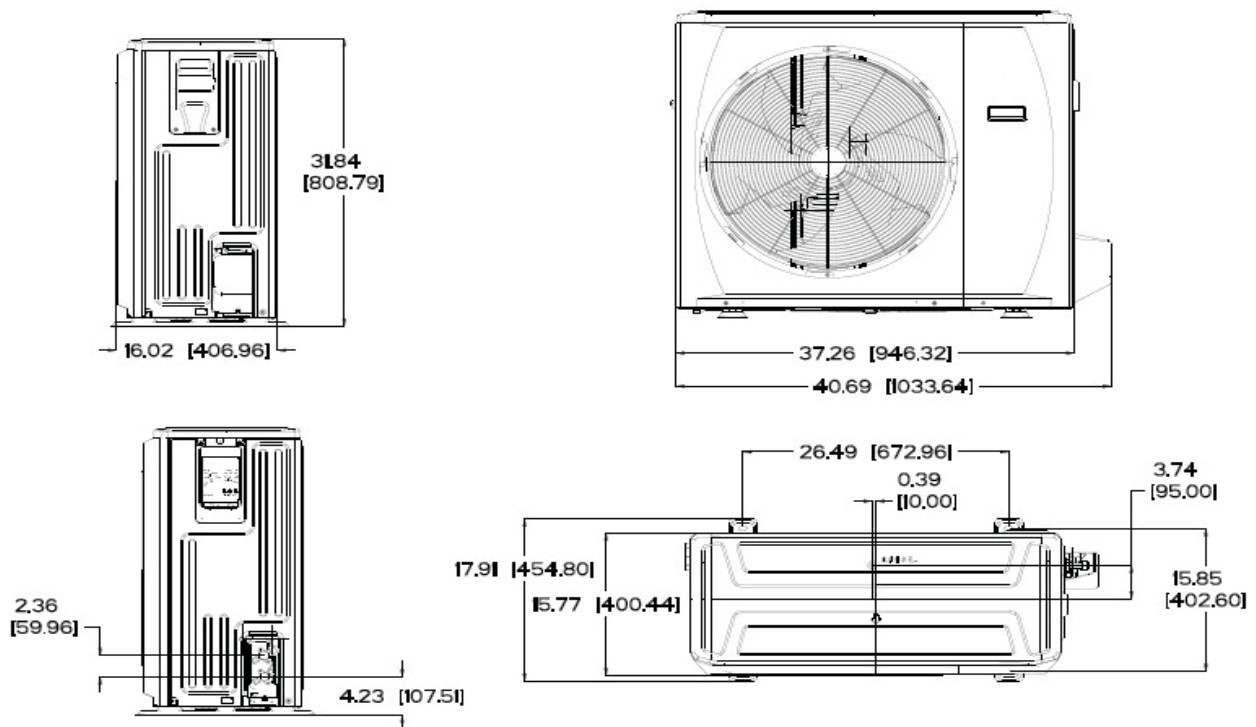


Fig. 6 — Dimension Sizes 24K, 30K, and 36K

CLEARANCES

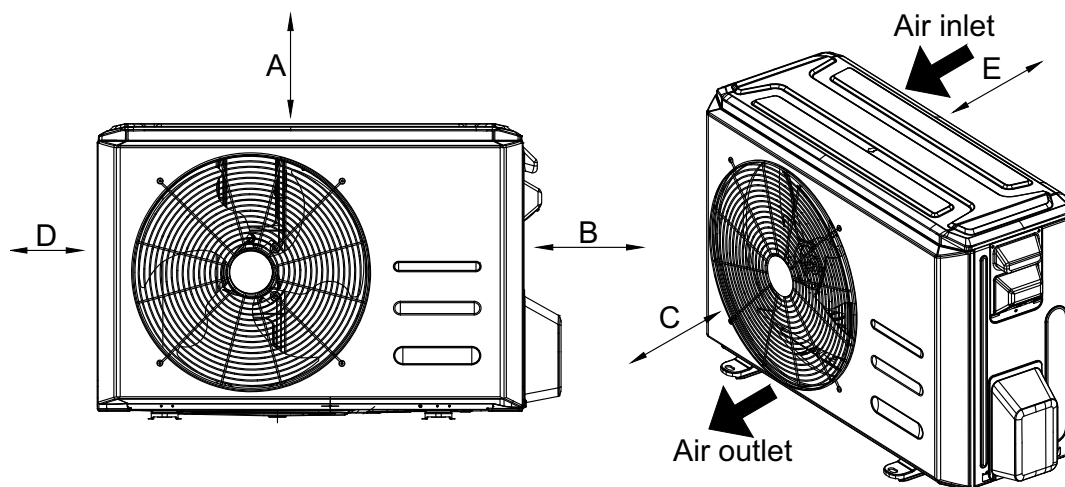


Fig. 7 — Clearances

UNIT	MINIMUM VALUE IN. (MM)
A	24 (610)
B	24 (610)
C	24 (610)
D	4 (101)
E	4 (101)

NOTE: The outdoor unit must be mounted at least 2in (50mm) above the maximum anticipated snow depth.

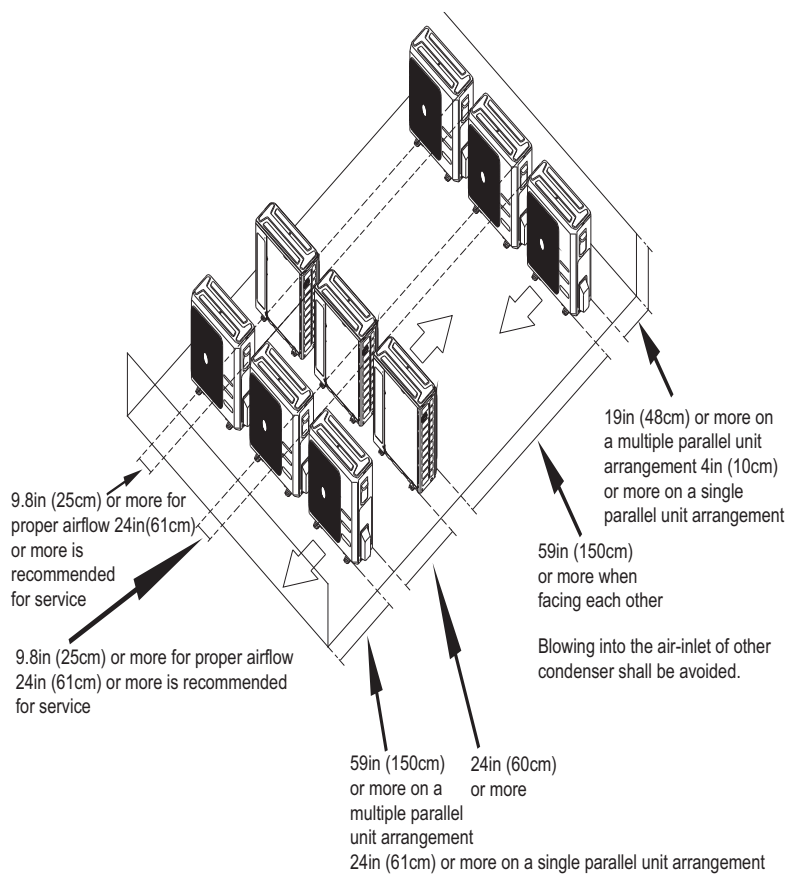


Fig. 8 — Clearances for multiple units

SPECIFICATIONS

System	SIZE		12K	6K	9K	12K	18K	24K	30K	36K
	Outdoor Model		38MARBQ12AA1	38MARBQ06AA3	38MARBQ09AA3	38MARBQ12AA3	38MARBQ18AA3	38MARBQ24AA3	38MARBQ30AA3	38MARBQ36AA3
Electrical	Voltage, Phase, Cycle	V/Ph/Hz	115-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
	MCA	A.	19	13	15	15	16	25	23	28
	Recommended Fuse Size	A.	20	15	15	15	20	30	25	30
	MOCP - Fuse Rating	A.	25	15	15	15	25	35	30	35
Operating Range	Cooling Outdoor DB Min - Max	*F(°C)	-22~122 (-30~50)	-22~122 (-30~50)	-22~122 (-30~50)	-22~122 (-30~50)	-22~122 (-30~50)	-22~122 (-30~50)	-22~122 (-30~50)	-22~122 (-30~50)
	Heating Outdoor DB Min - Max	*F(°C)	-22~86 (-30~30)	-22~86 (-30~30)	-22~86 (-30~30)	-22~86 (-30~30)	-22~86 (-30~30)	-22~86 (-30~30)	-22~86 (-30~30)	-22~86 (-30~30)
Piping	Total Piping Length	ft (m)	82 (25)	82 (25)	82 (25)	82 (25)	98 (30)	164 (50)	164 (50)	213 (65)
	Piping Lift*	ft (m)	32 (10)	32 (10)	32 (10)	32 (10)	65 (20)	82 (25)	82 (25)	98 (30)
	Pipe Connection Size - Liquid	in (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Pipe Connection Size - Suction	in (mm)	1/2 (12.7)	3/8 (9.52)	3/8 (9.52)	1/2 (12.7)	1/2 (12.7)	5/8 (16)	5/8 (16)	5/8 (16)
Refrigerant	Refrigerant Type		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Charge	lbs (kg)	2.47 (1.12)	2.38 (1.08)	2.6 (1.18)	2.6 (1.18)	4.08 (1.85)	5.73 (2.6)	6.06 (2.75)	7.50 (3.40)
	Metering Device		EEV	EEV	EEV	EEV	EEV	EEV	EEV	EEV
Outdoor Coil	Face Area	Sq. Ft.	4.04	4.04	4.67	4.67	5.90	8.16	13.08	23.96
	No. Rows		2	2	2	2	2	2	3	3
	Fins per inch		21	21	20	20	20	20	18	18
	Circuits		4	4	4	4	6	4	6	6
Compressor	Type		Rotary Inverter	Rotary Inverter	Rotary Inverter	Rotary Inverter	Rotary Inverter	Rotary Inverter	Rotary Inverter	Rotary Inverter
	Model		KSK103D33UEZ3	KSK103D33UEZ3	KTN110D42UFZ	KTN110D42UFZ	KTM240D43UKT	KTM240D43UKT	KTF250D22UMT	KTF250D22UMT
	Oil Type		VG74	VG74	VG74	VG74	VG74	VG74	VG74	VG74
	Oil Charge	Fl. Oz.	10.5	10.5	11.8	11.8	21.0	21.0	22.7	22.7
	Rated Current	RLA	11.5	6.4	6.0	8.5	14.3	14.8	15.0	18.0
Outdoor	Unit Width	in (mm)	30.12 (765)	30.12 (765)	31.69 (805)	31.69 (805)	35.04 (890)	37.24 (946)	37.24 (946)	37.24 (946)
	Unit Height	in (mm)	21.85 (555)	21.85 (555)	21.81 (554)	21.81 (554)	26.50 (673)	31.89 (810)	31.89 (810)	31.89 (810)
	Unit Depth	in (mm)	11.93 (303)	11.93 (303)	12.99 (330)	12.99 (330)	13.46 (342)	16.14 (410)	16.14 (410)	16.14 (410)
	Net Weight	lbs (kg)	66.80 (30.3)	63.71 (28.9)	74.07 (33.6)	73.63 (33.4)	100.97 (45.8)	134.48 (61)	141.76 (64.3)	150.13 (68.1)
	Airflow	CFM	794	1,294	1,324	1,324	1,765	2,235	2,235	2,235
	Sound Pressure	dB(A)	54.0	54.5	54.5	56.0	59.0	62.0	61.5	61.5

* Condensing unit above or below the indoor unit

NOTE: See the current compatibility chart for list of indoor unit and outdoor unit match ups.

PERFORMANCE

High Wall

High Wall	Indoor Model		12K (115V)	6K(208/230V)	9K(208/230V)	12K(208/230V)	18K(208/230V)	24K(208/230V)	30K(208/230V)	36K(208/230V)
	Energy Star		YES	YES	YES	YES	YES	YES	NO	NO
	Cooling Rated Capacity	Btu/h	12,000	6,000	9,000	12,000	18,000	24,000	30,000	36,000
	Cooling Cap. Range Min - Max	Btu/h	3,500~13,200	2,500~11,000	3,300~13,400	3,300~14,300	8,870~19,400	6,850~27,000	9,070~30,700	9,300~38,800
	SEER		23.0	26.5	28.1	25.5	21.5	21.5	20.0	17.5
	EER		13	15.8	16.2	14	12.5	13	11.5	8.5
	Heating Rated Capacity (47°F)	Btu/h	12,100	7,400	11,800	12,000	18,000	29,000	30,000	36,000
	Heating Rated Capacity (17°F)	Btu/h	7,400	4,900	7,500	7,500	10,800	19,800	19,000	22,400
	Heating Maximum Capacity (17°F)	Btu/h	12,200	9,000	12,000	12,000	14,000	24,480	20,670	23,600
	Heating Maximum Capacity (5°F)	Btu/h	7,100	7,500	10,500	12,000	18,000	25,400	17,200	20,400
	Heating Cap. Range Min - Max	Btu/h	5,000~12,200	3,500~11,600	5,000~15,200	5,000~15,300	8,400~19,500	8,600~31,000	8,600~34,800	11,570~37,000
	HSPF		11.5	14.0	13.0	13.0	13.0	12.0	9.6	9.0
	COP (47°F)	W/W	3.70	3.90	3.81	3.81	3.10	3.40	2.60	2.51
	COP (17°F)	W/W	2.67	3.05	3.00	3.00	2.80	3.05	2.25	2.18
	COP (5°F)	W/W	2.18	1.90	1.80	1.75	1.78	1.75	1.75	1.75

Cassette

Cassette	Indoor Model		9K(208/230V)	12K(208/230V)	18K(208/230V)	24K(208/230V)
	Energy Star		YES	YES	YES	NO
	Cooling System Tons		0.75	1.00	1.33	2.00
	Cooling Rated Capacity	Btu/h	9,000	12,000	16,000	24,000
	Cooling Cap. Range Min - Max	Btu/h	2,850~11,100	3,000~13,700	5,600~17,000	8,000~25,000
	SEER		20.5	21.5	20.0	20.0
	EER		13.0	12.7	12.5	11.0
	Heating Rated Capacity (47°F)	Btu/h	10,000	12,000	18,000	24,000
	Heating Rated Capacity (17°F)	Btu/h	6,650	8,250	11,200	15,100
	Heating Maximum Capacity (17°F)	Btu/h	11,800	14,000	21,000	24,200
	Heating Maximum Capacity (5°F)	Btu/h	10,200	11,500	17,000	24,100
	Heating Cap. Range Min - Max	Btu/h	1,800~12,500	2,000~15,300	8,700~21,000	11,840~27,000
	HSPF		10.8	10.6	10.3	11.6
	COP (47°F)	W/W	2.93	3.22	2.88	3.50
	COP (17°F)	W/W	1.80	2.20	1.80	2.70
	COP (5°F)	W/W	1.79	1.86	1.68	1.75

Ducted

Ducted	Indoor Model		9K(208/230V)	12K(208/230V)	18K(208/230V)	24K(208/230V)
	Energy Star		YES	YES	YES	YES
	Cooling System Tons		0.75	1.0	1.4	2.0
	Cooling Rated Capacity	Btu/h	9,000	12,000	16,500	24,000
	Cooling Cap. Range Min - Max	Btu/h	2,400~12,500	2,250~14,400	6,500~18,800	6,500~27,800
	SEER		23.0	21.5	19.6	20.6
	EER		14.0	13.0	12.5	12.5
	Heating Rated Capacity (47°F)	Btu/h	10,000	12,000	19,000	24,600
	Heating Rated Capacity (17°F)	Btu/h	6,450	8,350	12,700	16,500
	Heating Maximum Capacity (17°F)	Btu/h	11,600	12,900	21,500	26,500
	Heating Maximum Capacity (5°F)	Btu/h	9,900	12,400	17,800	24,600
	Heating Cap. Range Min - Max	Btu/h	1,700~15,600	1,800~16,300	8,900~22,000	12,200~32,200
	HSPF		12.0	11.5	11.0	12.6
	COP (47°F)	W/W	3.62	3.52	2.93	3.66
	COP (17°F)	W/W	1.90	2.00	1.90	2.80
	COP (5°F)	W/W	1.78	1.87	1.75	2.01

NOTE: For information on sizes 36 to 58, refer to the 38MBQ or 38MBR product data document.

Console

Console	Indoor Model		12K(208/230V)	18K(208/230V)	24K(208/230V)
	Energy Star		YES	YES	NO
	Cooling System Tons		1.0	1.4	2.0
	Cooling Rated Capacity	Btu/h	12,000	17,000	24,000
	Cooling Cap. Range Min - Max	Btu/h	2,800~13,500	7,800~19,900	9,000~26,800
	SEER		23.0	20.2	20.2
	EER		13.0	12.5	11.5
	Heating Rated Capacity (47°F)	Btu/h	12,000	18,000	24,600
	Heating Rated Capacity (17°F)	Btu/h	8,400	12,000	14,500
	Heating Maximum Capacity (17°F)	Btu/h	13,100	20,700	26,661
	Heating Maximum Capacity (5°F)	Btu/h	12,100	16,000	24,894
	Heating Cap. Range Min - Max	Btu/h	2,350~15,700	8,600~21,500	12,500~30,500
	HSPF		11.5	10.6	11.6
	COP (47°F)	W/W	3.22	3.19	3.52
	COP (17°F)	W/W	2	1.8	2.7
	COP (5°F)	W/W	1.84	1.75	1.76

Air Handler

Air Handler	Indoor Model		24K(208/230V)
	Outdoor Model		24K(208/230V)
	Energy Star		YES
	ASHP COLD CLIMATE		NO
	Cooling System Tons		2.0
	Cooling Rated Capacity	Btu/h	22,000
	Cooling Cap. Range Min - Max	Btu/h	7,500~26,000
	SEER		20.0
	EER		12.5
	Heating Rated Capacity (47°F)	Btu/h	27,000
	Heating Rated Capacity (17°F)	Btu/h	16,500
	Heating Maximum Capacity (17°F)	Btu/h	25,000
	Heating Maximum Capacity (5°F)	Btu/h	22,000
	Heating Cap. Range Min - Max	Btu/h	5,600~31,000
	HSPF		11.6
	COP (47°F)	W/W	3.77
	COP (17°F)	W/W	2.60
	COP (5°F)	W/W	1.75

COOLING PERFORMANCE - HIGH WALL

Cooling Performance - High Wall (Sheet 1 of 3)

MODEL	COOLING				OUTDOOR CONDITIONS (DB)											
	INDOOR CONDITIONS DB	WB		(-22°F) (-25°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	47°F (8°C)	77°F (25°C)	86°F (30°C)	95°F (35°C)	104°F (40°C)	113°F (45°C)	122°F (50°C)
12K(115V)	69.8°F (21°C)	59°F (15°C)	TC	12.46	12.16	11.87	10.85	10.92	11.26	10.60	9.96	10.73	10.51	8.55	7.46	4.80
			SC	9.12	8.91	8.69	7.88	7.91	8.00	7.71	7.34	7.74	7.70	6.56	6.19	4.79
			Input	0.69	0.70	0.70	0.81	0.79	0.71	0.46	0.59	0.82	1.01	0.98	0.85	0.68
	75.2°F (24°C)	62.6°F (17°C)	TC	12.39	12.10	11.80	10.79	10.86	11.20	10.54	9.90	10.66	10.45	8.48	7.40	4.74
			SC	9.13	8.91	8.70	7.95	8.00	8.25	7.76	7.29	7.86	7.70	6.25	5.45	3.49
			Input	0.52	0.53	0.54	0.65	0.62	0.55	0.30	0.42	0.65	0.85	0.81	0.68	0.52
	80.6°F (27°C)	66.2°F (19°C)	TC	13.09	12.80	12.51	11.49	11.56	11.90	11.24	10.60	11.37	11.15	9.19	8.10	5.44
			SC	9.63	9.41	9.19	8.45	8.50	8.75	8.26	7.79	8.36	8.20	6.75	5.95	4.00
			Input	0.58	0.58	0.59	0.70	0.68	0.60	0.35	0.47	0.71	0.90	0.87	0.73	0.57
	89.6°F (32°C)	73.4°F (23°C)	TC	14.23	13.94	13.64	12.63	12.70	13.04	12.38	11.74	12.50	12.29	10.32	9.23	6.58
			SC	10.52	10.30	10.08	9.33	9.38	9.63	9.15	8.67	9.24	9.08	7.63	6.82	4.86
			Input	0.60	0.60	0.61	0.72	0.70	0.62	0.37	0.50	0.73	0.92	0.89	0.76	0.59
6K(208-230V)	69.8°F (21°C)	59°F (15°C)	TC	10.66	10.49	10.32	9.40	9.56	10.23	10.42	9.29	8.64	9.68	8.87	7.87	6.05
			SC	7.87	7.74	7.62	6.69	6.77	7.35	7.46	6.93	6.64	7.14	6.72	6.26	5.46
			Input	0.48	0.51	0.53	0.61	0.62	0.60	0.60	0.58	0.65	0.96	0.96	0.96	0.89
	75.2°F (24°C)	62.6°F (17°C)	TC	11.35	11.18	11.01	10.09	10.25	10.92	11.11	9.98	9.33	10.37	9.56	8.56	6.74
			SC	8.36	8.23	8.11	7.43	7.55	8.04	8.18	7.35	6.87	7.63	7.04	6.30	4.96
			Input	0.49	0.52	0.54	0.61	0.63	0.61	0.61	0.59	0.66	0.97	0.97	0.97	0.90
	80.6°F (27°C)	66.2°F (19°C)	TC	12.10	11.93	11.77	10.84	11.00	11.67	11.87	10.73	10.09	11.12	10.31	9.31	7.49
			SC	8.78	8.66	8.53	7.86	7.98	8.47	8.61	7.78	7.31	8.06	7.48	6.75	5.43
			Input	0.50	0.53	0.56	0.63	0.64	0.62	0.62	0.60	0.67	0.98	0.99	0.98	0.91
	89.6°F (32°C)	73.4°F (23°C)	TC	13.57	13.40	13.23	12.30	12.47	13.14	13.33	12.19	11.55	12.58	11.77	10.77	8.95
			SC	8.95	8.84	8.73	8.12	8.23	8.67	8.80	8.05	7.62	8.31	7.77	7.11	5.91
			Input	0.53	0.55	0.58	0.65	0.66	0.64	0.64	0.63	0.69	1.00	1.01	1.00	0.93
9K(208-230V)	69.8°F (21°C)	59°F (15°C)	TC	11.67	11.49	11.31	10.52	10.42	10.22	11.14	10.75	11.59	10.38	10.04	8.58	4.95
			SC	8.30	8.17	8.04	7.45	7.49	7.34	7.77	7.56	8.02	7.38	7.21	6.50	4.95
			Input	0.18	0.23	0.28	0.27	0.36	0.34	0.56	0.70	1.00	0.96	1.08	1.04	0.67
	75.2°F (24°C)	62.6°F (17°C)	TC	12.62	12.44	12.25	11.47	11.37	11.17	12.08	11.70	12.54	11.33	10.99	9.53	5.90
			SC	8.95	8.82	8.69	8.14	8.07	7.92	8.57	8.30	8.89	8.04	7.79	6.76	4.18
			Input	0.25	0.31	0.36	0.34	0.44	0.42	0.64	0.77	1.07	1.03	1.15	1.11	0.74
	80.6°F (27°C)	66.2°F (19°C)	TC	13.64	13.46	13.27	12.49	12.39	12.19	13.11	12.72	13.56	12.35	12.01	10.55	6.92
			SC	9.50	9.37	9.24	8.70	8.63	8.49	9.13	8.86	9.44	8.60	8.36	7.34	4.82
			Input	0.33	0.39	0.44	0.42	0.52	0.50	0.72	0.85	1.15	1.11	1.23	1.19	0.82
	89.6°F (32°C)	73.4°F (23°C)	TC	15.50	15.32	15.13	14.35	14.25	14.05	14.97	14.58	15.42	14.21	13.87	12.41	8.78
			SC	9.78	9.66	9.55	9.05	8.99	8.86	9.44	9.20	9.73	8.97	8.75	7.83	5.54
			Input	0.47	0.52	0.57	0.56	0.65	0.63	0.85	0.99	1.28	1.24	1.37	1.33	0.96

Cooling Performance - High Wall (Sheet 2 of 3)

MODEL	COOLING				OUTDOOR CONDITIONS (DB)											
	INDOOR CONDITIONS DB WB			(-22°F (-25°C)	(-13°F (-25°C)	(-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	47°F (8°C)	77°F (25°C)	86°F (30°C)	95°F (35°C)	104°F (40°C)	113°F (45°C)	122°F (50°C)
12K(208-230V)	69.8°F (21°C)	59°F (15°C)	TC	12.39	12.17	11.95	10.87	11.11	11.15	11.36	11.26	10.88	12.19	9.86	8.53	5.11
			SC	8.59	8.44	8.29	7.91	8.01	8.02	7.99	7.94	7.63	8.45	7.10	6.50	5.11
			Input	0.32	0.37	0.41	0.44	0.46	0.47	0.59	0.70	0.88	1.20	1.08	1.06	0.67
	75.2°F (24°C)	62.6°F (17°C)	TC	13.19	12.97	12.76	11.68	11.92	11.95	12.17	12.07	11.69	13.00	10.67	9.34	5.92
			SC	9.13	8.98	8.83	8.08	8.25	8.27	8.42	8.36	8.09	9.00	7.39	6.46	4.10
			Input	0.33	0.38	0.42	0.45	0.47	0.48	0.60	0.72	0.89	1.21	1.09	1.07	0.68
	80.6°F (27°C)	66.2°F (19°C)	TC	14.06	13.84	13.62	12.55	12.79	12.82	13.04	12.94	12.56	13.87	11.54	10.21	6.79
			SC	9.56	9.41	9.27	8.53	8.69	8.72	8.86	8.80	8.54	9.43	7.85	6.94	4.61
			Input	0.35	0.39	0.43	0.47	0.48	0.49	0.62	0.73	0.90	1.22	1.10	1.08	0.69
	89.6°F (32°C)	73.4°F (23°C)	TC	15.77	15.55	15.34	14.26	14.50	14.53	14.75	14.65	14.27	15.58	13.25	11.92	8.50
			SC	9.75	9.61	9.48	8.81	8.96	8.98	9.11	9.05	8.82	9.63	8.19	7.37	5.25
			Input	0.37	0.42	0.46	0.49	0.51	0.52	0.64	0.75	0.93	1.25	1.13	1.11	0.72
18K(208-230V)	69.8°F (21°C)	59°F (15°C)	TC	76.74	72.23	67.72	17.20	17.20	189.44	17.31	16.60	16.23	16.15	14.66	11.09	7.51
			SC	58.58	55.14	51.69	16.47	16.48	13.51	12.87	12.48	12.33	12.33	11.65	9.99	7.51
			Input	0.43	0.51	0.59	0.72	0.72	0.65	0.91	1.14	1.37	1.74	1.91	1.66	1.37
	75.2°F (24°C)	62.6°F (17°C)	TC	79.70	75.19	70.68	20.15	20.15	192.39	20.26	19.55	19.18	19.10	17.62	14.05	10.46
			SC	49.39	46.59	43.80	12.49	12.49	119.23	12.56	12.11	11.89	11.84	10.92	8.70	6.48
			Input	0.51	0.59	0.67	0.80	0.80	0.73	0.99	1.22	1.45	1.82	1.99	1.74	1.45
	80.6°F (27°C)	66.2°F (19°C)	TC	81.77	77.26	72.75	22.23	22.23	194.47	22.34	21.62	21.25	21.18	19.69	16.12	12.53
			SC	46.83	44.25	41.67	12.73	12.73	111.38	12.79	12.38	12.17	12.13	11.28	9.23	7.18
			Input	0.57	0.65	0.73	0.86	0.86	0.79	1.05	1.28	1.51	1.88	2.05	1.79	1.50
	89.6°F (32°C)	73.4°F (23°C)	TC	85.23	80.72	76.21	25.69	25.69	197.93	25.80	25.08	24.72	24.64	23.15	19.58	15.99
			SC	48.81	46.23	43.64	14.71	14.71	113.35	14.78	14.37	14.15	14.11	13.26	11.21	9.16
			Input	0.66	0.74	0.82	0.96	0.96	0.89	1.14	1.37	1.61	1.98	2.14	1.89	1.60
24K(208-230V)	69.8°F (21°C)	59°F (15°C)	TC	25.74	25.04	24.34	21.22	24.09	23.78	22.49	21.12	17.77	14.59	9.18	18.45	15.41
			SC	21.08	20.50	19.93	14.92	16.45	16.41	15.77	15.04	13.46	11.94	9.18	14.06	12.58
			Input	1.62	1.66	1.70	1.59	1.60	1.90	2.09	2.30	2.17	2.10	1.68	2.31	2.27
	75.2°F (24°C)	62.6°F (17°C)	TC	35.54	34.83	34.13	31.01	33.88	33.57	32.29	30.91	27.57	24.38	18.97	28.24	25.20
			SC	24.61	24.12	23.63	21.47	23.46	23.24	22.36	21.40	19.09	16.88	13.13	19.55	17.45
			Input	1.91	1.95	1.99	1.89	1.89	2.20	2.38	2.60	2.46	2.40	1.97	2.61	2.56
	80.6°F (27°C)	66.2°F (19°C)	TC	41.01	40.30	39.60	36.48	39.35	39.04	37.76	36.38	33.04	29.85	24.44	33.71	30.67
			SC	25.54	25.10	24.66	22.72	24.51	24.31	23.51	22.66	20.58	18.59	15.22	20.99	19.10
			Input	2.08	2.12	2.15	2.05	2.06	2.36	2.54	2.76	2.62	2.56	2.13	2.77	2.73
	89.6°F (32°C)	73.4°F (23°C)	TC	50.67	49.96	49.26	46.14	49.02	48.70	47.42	46.04	42.70	39.51	34.10	43.37	40.33
			SC	23.46	23.13	22.81	21.36	22.70	22.55	21.95	21.32	19.77	18.29	15.79	20.08	18.67
			Input	2.36	2.40	2.44	2.33	2.34	2.64	2.82	3.04	2.90	2.84	2.42	3.05	3.01

Cooling Performance - High Wall (Sheet 3 of 3)

MODEL	COOLING				OUTDOOR CONDITIONS (DB)											
	INDOOR CONDITIONS DB	WB		(-22°F (-25°C))	-13°F (-25°C))	-4°F (-20°C))	0°F (-17°C))	5°F (-15°C))	17°F (-8°C))	47°F (8°C))	77°F (25°C))	86°F (30°C))	95°F (35°C))	104°F (40°C))	113°F (45°C))	122°F (50°C))
30K(208-230V)	69.8°F (21°C)	59°F (15°C)	TC	34.03	33.11	32.19	31.02	30.60	24.61	29.32	28.31	27.79	28.49	23.14	19.09	7.47
			SC	22.80	22.18	21.57	20.58	20.33	17.23	19.63	19.09	18.77	19.09	16.34	14.36	7.20
			Input	1.20	1.31	1.42	1.28	1.35	1.66	1.93	2.43	2.89	4.11	3.08	2.77	1.46
	75.2°F (24°C)	62.6°F (17°C)	TC	36.97	36.05	35.13	33.96	33.54	27.55	32.26	31.25	30.73	31.43	26.08	22.03	10.41
			SC	24.17	23.57	22.97	22.21	21.93	18.01	21.09	20.43	20.09	20.55	17.05	14.40	6.81
			Input	1.35	1.47	1.58	1.43	1.50	1.81	2.08	2.58	3.04	4.26	3.24	2.92	1.62
	80.6°F (27°C)	66.2°F (19°C)	TC	39.96	39.04	38.12	36.95	36.52	30.53	35.24	34.24	33.72	34.42	29.06	25.01	13.39
			SC	25.37	24.79	24.20	23.46	23.19	19.39	22.38	21.74	21.41	21.85	18.45	15.88	8.51
			Input	1.49	1.60	1.72	1.57	1.64	1.95	2.22	2.72	3.18	4.40	3.38	3.06	1.75
	89.6°F (32°C)	73.4°F (23°C)	TC	45.56	44.64	43.72	42.55	42.13	36.14	40.85	39.84	39.32	40.02	34.67	30.62	19.00
			SC	26.05	25.53	25.00	24.33	24.09	20.67	23.36	22.78	22.49	22.89	19.83	17.51	10.86
			Input	1.76	1.87	1.98	1.84	1.91	2.21	2.49	2.99	3.45	4.67	3.64	3.33	2.02
36K(208-230V)	69.8°F (21°C)	59°F (15°C)	TC	34.82	33.67	32.52	30.45	29.71	29.38	27.20	21.12	25.84	26.04	22.47	15.45	7.27
			SC	26.03	25.17	24.31	21.40	21.04	20.83	19.74	17.15	19.31	19.46	17.50	14.33	7.27
			Input	0.96	1.06	1.16	1.19	1.26	1.30	1.60	1.38	2.46	3.09	3.11	2.33	1.50
	75.2°F (24°C)	62.6°F (17°C)	TC	37.71	36.56	35.41	33.34	32.60	32.27	30.09	24.01	28.73	28.93	25.36	18.34	10.16
			SC	28.34	27.47	26.61	25.05	24.50	24.25	22.61	18.04	21.59	21.74	19.06	13.78	7.64
			Input	1.01	1.11	1.21	1.23	1.31	1.35	1.65	1.43	2.51	3.14	3.16	2.38	1.55
	80.6°F (27°C)	66.2°F (19°C)	TC	40.57	39.42	38.26	36.19	35.45	35.13	32.94	26.86	31.58	31.78	28.21	21.20	13.02
			SC	29.94	29.09	28.24	26.72	26.17	25.93	24.32	19.83	23.31	23.46	20.83	15.65	9.61
			Input	1.07	1.16	1.26	1.29	1.36	1.40	1.70	1.48	2.56	3.19	3.21	2.43	1.60
	89.6°F (32°C)	73.4°F (23°C)	TC	46.15	45.00	43.85	41.78	41.03	40.71	38.53	32.44	37.16	37.37	33.80	26.78	18.60
			SC	34.24	33.38	32.53	30.99	30.44	30.20	28.58	24.07	27.57	27.72	25.07	19.87	13.80
			Input	1.17	1.27	1.37	1.39	1.47	1.51	1.81	1.59	2.67	3.30	3.32	2.54	1.71

LEGEND

DB - Dry Bulb

WB - Wet Bulb

TC - Total Net Capacity (1000 Btu/hour)

SC - Sensible Capacity (1000 Btu/hour)

Input - Total Power (kW)

HEATING PERFORMANCE - HIGH WALL

Heating Performance - High Wall - (Sheet 1 of 3)

MODEL	HEATING		OUTDOOR CONDITIONS (DB)											
	Indoor Conditions DB		-22°F (-30°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	19.4°F (-7°C)	24.8°F (-4°C)	32°F (0°C)	39.2°F (4°C)	44.6°F (7°C)	53.6°F (12°C)
12K(115V)	59°F (15°C)	TC	3.67	4.79	5.46	6.58	6.79	9.28	9.59	10.45	11.93	12.93	13.00	13.57
		Input	0.68	0.75	0.86	0.85	0.90	0.99	1.01	1.00	1.14	1.22	1.15	1.06
		COP	1.58	1.87	1.86	2.28	2.22	2.75	2.78	3.06	3.06	3.10	3.31	3.75
	64.4°F (18°C)	TC	3.77	4.90	5.56	6.68	6.89	9.38	9.70	10.55	12.03	13.03	13.10	13.67
		Input	0.69	0.76	0.86	0.85	0.90	0.99	1.02	1.01	1.15	1.23	1.16	1.07
		COP	1.61	1.89	1.89	2.30	2.24	2.76	2.80	3.07	3.07	3.11	3.32	3.76
	69°F (20.5°C)	TC	3.86	4.98	5.65	6.77	6.98	9.46	9.78	10.64	12.12	13.12	13.19	13.75
		Input	0.69	0.76	0.87	0.86	0.91	1.00	1.02	1.01	1.15	1.23	1.16	1.07
		COP	1.63	1.92	1.91	2.31	2.26	2.78	2.81	3.08	3.08	3.12	3.33	3.77
	71.6°F (22°C)	TC	3.90	5.03	5.70	6.82	7.03	9.51	9.83	10.68	12.17	13.17	13.24	13.80
		Input	0.69	0.76	0.87	0.86	0.91	1.00	1.02	1.01	1.16	1.24	1.16	1.07
		COP	1.65	1.93	1.92	2.32	2.27	2.78	2.81	3.09	3.09	3.12	3.34	3.77
6K(208-230V)	59°F (15°C)	TC	4.17	4.60	5.83	7.28	7.06	9.38	9.59	10.60	10.69	12.55	11.87	12.39
		Input	0.81	0.87	0.95	1.00	1.14	1.13	1.16	1.22	1.10	1.25	1.08	1.09
		COP	1.52	3.94	1.80	2.16	1.86	2.43	2.43	2.60	2.90	2.94	3.23	3.34
	64.4°F (18°C)	TC	4.18	4.61	5.83	7.29	7.07	9.38	9.60	10.61	10.70	12.55	11.88	12.40
		Input	0.84	0.90	0.98	1.03	1.17	1.16	1.19	1.25	1.14	1.28	1.11	1.12
		COP	1.46	1.49	1.74	2.07	1.77	2.37	2.37	2.48	2.76	2.87	3.14	3.25
	69°F (20.5°C)	TC	4.19	4.62	5.84	7.30	7.08	9.39	9.60	10.61	10.71	12.56	11.89	12.41
		Input	0.81	0.87	0.95	1.00	1.14	1.13	1.16	1.22	1.10	1.25	1.08	1.09
		COP	1.52	3.94	1.80	2.16	1.86	2.43	2.43	2.60	2.90	2.94	3.23	3.34
	71.6°F (22°C)	TC	3.01	3.44	4.66	6.12	5.90	8.21	8.42	9.43	9.53	11.38	10.71	11.23
		Input	0.88	0.95	1.02	1.07	1.21	1.20	1.23	1.29	1.18	1.32	1.15	1.16
		COP	1.00	1.07	1.34	1.67	1.43	2.00	2.01	2.14	2.37	2.52	2.73	2.84
9K(208-230V)	59°F (15°C)	TC	5.53	7.29	9.69	11.13	11.77	13.87	14.43	14.88	15.84	15.56	16.36	14.17
		Input	1.27	1.38	1.44	1.67	1.60	1.74	1.80	1.83	1.83	1.48	1.51	1.32
		COP	1.28	1.54	1.97	1.95	2.15	2.33	2.36	2.38	2.54	3.07	3.17	3.13
	64.4°F (18°C)	TC	5.55	7.32	9.72	11.16	11.80	13.89	14.46	14.91	15.86	15.58	16.39	14.19
		Input	1.17	1.28	1.34	1.57	1.50	1.64	1.70	1.73	1.72	1.38	1.41	1.22
		COP	1.39	1.67	2.12	2.09	2.30	2.48	2.50	2.52	2.70	3.30	3.41	3.40
	69°F (20.5°C)	TC	5.58	7.34	9.74	11.18	11.82	13.91	14.48	14.93	15.89	15.60	16.41	14.21
		Input	1.27	1.38	1.44	1.67	1.60	1.74	1.80	1.83	1.83	1.48	1.51	1.32
		COP	1.28	1.54	1.97	1.95	2.15	2.33	2.36	2.38	2.54	3.07	3.17	3.13
	71.6°F (22°C)	TC	2.70	4.46	6.86	8.30	8.95	11.04	11.60	12.05	13.01	12.73	13.54	11.34
		Input	1.04	1.15	1.21	1.43	1.37	1.51	1.56	1.60	1.59	1.25	1.27	1.09
		COP	0.76	1.14	1.66	1.70	1.92	2.15	2.18	2.21	2.40	2.99	3.11	3.05

Heating Performance - High Wall - (Sheet 2 of 3)

MODEL	HEATING		OUTDOOR CONDITIONS (DB)											
	Indoor Conditions DB		-22°F (-30°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	19.4°F (-7°C)	24.8°F (-4°C)	32°F (0°C)	39.2°F (4°C)	44.6°F (7°C)	53.6°F (12°C)
12K(208-230V)	59°F (15°C)	TC	6.15	7.54	9.98	11.51	12.32	14.03	13.41	14.40	15.97	17.25	15.99	15.16
		Input	1.44	1.58	1.68	1.77	1.84	1.80	1.77	1.72	1.79	1.93	1.49	1.16
		COP	1.25	1.40	1.74	1.91	1.96	2.29	2.22	2.46	2.61	2.62	3.16	3.82
	64.4°F (18°C)	TC	6.13	7.51	9.95	11.48	12.29	14.00	13.38	14.37	15.95	17.23	15.96	15.13
		Input	1.44	1.58	1.68	1.77	1.84	1.80	1.77	1.72	1.79	1.93	1.49	1.16
		COP	1.24	1.40	1.74	1.90	1.96	2.29	2.22	2.46	2.61	2.61	3.15	3.82
	69°F (20.5°C)	TC	6.10	7.49	9.93	11.45	12.26	13.98	13.36	14.35	15.92	17.20	15.94	15.10
		Input	1.44	1.58	1.68	1.77	1.84	1.80	1.77	1.72	1.79	1.93	1.49	1.16
		COP	1.24	1.39	1.73	1.90	1.95	2.28	2.21	2.45	2.61	2.61	3.14	3.81
	71.6°F (22°C)	TC	6.09	7.48	9.92	11.44	12.25	13.96	13.35	14.34	15.91	17.19	15.92	15.09
		Input	1.44	1.58	1.68	1.77	1.84	1.80	1.77	1.72	1.79	1.93	1.49	1.16
		COP	1.24	1.39	1.73	1.90	1.95	2.28	2.21	2.45	2.60	2.60	3.14	3.81
18K(208-230V)	59°F (15°C)	TC	11.23	13.95	16.18	17.77	23.52	18.96	26.96	25.23	23.66	25.16	24.03	25.36
		Input	1.90	2.16	2.27	2.44	3.02	2.76	2.59	2.95	2.42	2.33	1.97	1.87
		COP	1.73	1.89	2.09	2.14	2.28	2.01	3.05	2.51	2.86	3.16	3.58	3.97
	64.4°F (18°C)	TC	11.33	14.05	16.28	17.87	23.62	19.06	27.07	25.33	23.76	25.26	24.13	25.47
		Input	1.91	2.17	2.27	2.44	3.03	2.77	2.59	2.95	2.43	2.34	1.98	1.88
		COP	1.74	1.90	2.10	2.15	2.29	2.02	3.06	2.52	2.87	3.17	3.58	3.98
	69°F (20.5°C)	TC	11.42	14.14	16.37	17.96	23.71	19.15	27.15	25.42	23.85	25.35	24.22	25.55
		Input	1.91	2.18	2.28	2.45	3.04	2.78	2.60	2.96	2.44	2.34	1.98	1.88
		COP	1.75	1.90	2.11	2.15	2.29	2.02	3.06	2.52	2.87	3.17	3.58	3.98
	71.6°F (22°C)	TC	11.46	14.18	16.42	18.01	23.76	19.19	27.20	25.47	23.90	25.39	24.27	25.60
		Input	1.91	2.18	2.28	2.45	3.04	2.78	2.60	2.96	2.44	2.35	1.98	1.89
		COP	1.76	1.91	2.11	2.15	2.29	2.02	3.06	2.52	2.87	3.17	3.59	3.98
24K(208-230V)	59°F (15°C)	TC	10.23	16.43	18.00	22.24	23.23	22.00	28.48	26.87	31.10	32.41	29.36	29.90
		Input	2.79	3.20	3.13	3.60	3.56	3.13	3.81	3.50	3.72	3.62	2.60	2.33
		COP	1.08	1.50	1.69	1.81	1.91	2.06	2.19	2.25	2.45	2.63	3.31	3.76
	64.4°F (18°C)	TC	10.17	16.37	17.94	22.18	23.17	21.94	28.41	26.80	31.04	32.35	29.30	29.84
		Input	2.88	3.29	3.22	3.68	3.64	3.21	3.90	3.58	3.81	3.70	2.69	2.42
		COP	1.04	1.46	1.63	1.76	1.86	2.00	2.13	2.19	2.39	2.56	3.20	3.62
	69°F (20.5°C)	TC	10.12	16.32	17.89	22.13	23.11	21.88	28.36	26.75	30.99	32.30	29.24	29.79
		Input	2.79	3.20	3.13	3.60	3.56	3.13	3.81	3.50	3.72	3.62	2.60	2.33
		COP	1.08	1.50	1.69	1.81	1.91	2.06	2.19	2.25	2.45	2.63	3.31	3.76
	71.6°F (22°C)	TC	8.26	14.46	16.02	20.27	21.25	20.02	26.50	24.89	29.13	30.44	27.38	27.93
		Input	2.99	3.40	3.33	3.80	3.76	3.33	4.02	3.70	3.92	3.82	2.80	2.53
		COP	0.81	1.24	1.41	1.56	1.66	1.76	1.93	1.97	2.17	2.33	2.86	3.23

Heating Performance - High Wall - (Sheet 3 of 3)

MODEL	HEATING		OUTDOOR CONDITIONS (DB)											
	Indoor Conditions DB		-22°F (-30°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	19.4°F (-7°C)	24.8°F (-4°C)	32°F (0°C)	39.2°F (4°C)	44.6°F (7°C)	53.6°F (12°C)
30K(208-230V)	59°F (15°C)	TC	12.88	14.76	17.99	20.71	22.95	23.17	16.68	25.65	27.30	31.91	29.15	32.10
		Input	2.80	3.01	3.22	3.40	3.54	3.50	2.86	3.62	3.65	4.06	3.74	3.41
		COP	1.32	1.41	1.61	1.75	1.86	1.90	1.68	2.03	2.15	2.26	2.24	2.70
	64.4°F (18°C)	TC	13.37	15.24	18.48	21.20	23.43	23.66	17.16	26.13	27.79	32.40	29.64	32.59
		Input	3.14	3.35	3.56	3.74	3.88	3.84	3.20	3.96	3.99	4.39	4.08	3.75
		COP	1.25	1.33	1.52	1.66	1.77	1.81	1.57	1.93	2.04	2.16	2.13	2.55
	69°F (20.5°C)	TC	13.79	15.66	18.89	21.62	23.85	24.07	17.58	26.55	28.20	32.81	30.06	33.00
		Input	2.80	3.01	3.22	3.40	3.54	3.50	2.86	3.62	3.65	4.06	3.74	3.41
		COP	1.32	1.41	1.61	1.75	1.86	1.90	1.68	2.03	2.15	2.26	2.24	2.70
	71.6°F (22°C)	TC	15.49	17.36	20.59	23.32	25.55	25.77	19.28	28.25	29.90	34.51	31.76	34.70
		Input	3.59	3.80	4.01	4.19	4.33	4.29	3.65	4.41	4.44	4.84	4.53	4.20
		COP	1.26	1.34	1.50	1.63	1.73	1.76	1.55	1.88	1.97	2.09	2.06	2.42
36K(208-230V)	59°F (15°C)	TC	11.24	13.55	15.81	17.69	20.56	24.58	25.92	25.32	28.85	31.10	33.15	36.28
		Input	2.46	2.46	2.61	2.77	2.88	2.94	3.12	3.05	3.23	3.23	3.13	3.06
		COP	1.34	1.62	1.78	1.87	2.09	2.45	2.44	2.43	2.62	2.82	3.11	3.48
	64.4°F (18°C)	TC	10.80	13.11	15.37	17.25	20.12	24.14	25.48	24.88	28.40	30.66	32.71	35.84
		Input	2.43	2.42	2.58	2.73	2.85	2.90	3.08	3.01	3.20	3.20	3.09	3.02
		COP	1.30	1.59	1.75	1.85	2.07	2.44	2.42	2.42	2.60	2.81	3.10	3.47
	69°F (20.5°C)	TC	10.43	12.73	15.00	16.87	19.74	23.76	25.11	24.51	28.03	30.28	32.34	35.46
		Input	2.40	2.39	2.55	2.71	2.82	2.87	3.06	2.99	3.17	3.17	3.07	3.00
		COP	1.27	1.56	1.73	1.83	2.05	2.42	2.41	2.41	2.59	2.80	3.09	3.47
	71.6°F (22°C)	TC	10.22	12.52	14.79	16.66	19.53	23.55	24.89	24.30	27.82	30.07	32.13	35.25
		Input	2.38	2.38	2.53	2.69	2.80	2.86	3.04	2.97	3.15	3.15	3.05	2.98
		COP	1.26	1.54	1.71	1.82	2.04	2.42	2.40	2.40	2.59	2.80	3.09	3.47

LEGEND

DB - Dry Bulb

TC - Total Net Capacity (1000 Btu/hour)

Input - Total Power (kW)

COP - W/W

COOLING PERFORMANCE - CASSETTE

MODEL	COOLING			OUTDOOR CONDITIONS (DB)												
	INDOOR CONDITIONS DB	WB		(-22°F) (-25°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	47°F (8°C)	77°F (25°C)	86°F (30°C)	95°F (35°C)	104°F (40°C)	113°F (45°C)	122°F (50°C)
9K	69.8°F (21°C)	59°F (15°C)	TC	7.61	7.71	7.81	7.91	6.60	6.39	9.78	10.52	10.84	11.03	9.63	8.41	4.89
			SC	5.44	5.51	5.58	6.14	5.27	5.08	7.10	7.62	7.79	7.88	7.20	6.58	4.89
			Input	0.01	0.07	0.13	0.17	0.14	0.14	0.46	0.72	0.90	0.92	1.07	1.05	0.37
	75.2°F (24°C)	62.6°F (17°C)	TC	7.69	7.79	7.89	7.98	6.68	6.47	9.86	10.60	10.92	11.11	9.71	8.49	4.97
			SC	5.75	5.83	5.90	5.97	5.00	4.84	7.38	7.93	8.17	8.31	7.26	6.35	3.72
			Input	0.14	0.20	0.26	0.30	0.26	0.27	0.58	0.85	1.03	1.05	1.20	1.18	0.50
	80.6°F (27°C)	66.2°F (19°C)	TC	8.31	8.41	8.51	8.61	7.31	7.09	10.49	11.22	11.54	11.73	10.33	9.11	5.59
			SC	6.23	6.30	6.38	6.45	5.47	5.31	7.86	8.41	8.65	8.79	7.74	6.83	4.19
			Input	0.22	0.28	0.34	0.38	0.35	0.35	0.67	0.93	1.11	1.13	1.28	1.26	0.58
	89.6°F (32°C)	73.4°F (23°C)	TC	9.77	9.87	9.97	10.06	8.76	8.54	11.94	12.68	13.00	13.19	11.79	10.56	7.05
			SC	6.84	6.91	6.98	7.05	6.14	5.99	8.37	8.88	9.11	9.24	8.26	7.40	4.94
			Input	0.40	0.45	0.51	0.55	0.52	0.53	0.84	1.11	1.29	1.30	1.46	1.43	0.76
12K	69.8°F (21°C)	59°F (15°C)	TC	13.83	13.58	13.33	11.49	12.42	13.16	12.03	12.24	13.53	13.45	11.16	9.27	4.84
			SC	9.83	9.65	9.47	8.42	9.12	9.43	8.88	8.98	9.58	9.55	8.42	7.59	4.84
			Input	0.36	0.40	0.45	0.39	0.54	0.57	0.62	0.73	1.06	1.26	1.15	1.12	0.70
	75.2°F (24°C)	62.6°F (17°C)	TC	15.08	14.83	14.58	12.73	13.66	14.40	13.27	13.48	14.77	14.69	12.41	10.52	6.09
			SC	10.64	10.47	10.29	8.99	9.64	10.17	9.37	9.52	10.43	10.37	8.76	7.42	4.30
			Input	0.37	0.41	0.46	0.40	0.55	0.58	0.63	0.73	1.07	1.27	1.16	1.12	0.71
	80.6°F (27°C)	66.2°F (19°C)	TC	16.28	16.03	15.78	13.94	14.87	15.61	14.48	14.69	15.97	15.90	13.61	11.72	7.29
			SC	11.23	11.06	10.89	9.62	10.26	10.77	9.99	10.13	11.02	10.97	9.39	8.09	5.03
			Input	0.38	0.43	0.47	0.42	0.56	0.59	0.64	0.75	1.08	1.29	1.18	1.14	0.73
	89.6°F (32°C)	73.4°F (23°C)	TC	18.61	18.36	18.11	16.27	17.20	17.94	16.81	17.02	18.30	18.23	15.94	14.05	9.62
			SC	12.90	12.73	12.55	11.28	11.92	12.43	11.65	11.80	12.69	12.63	11.05	9.74	6.67
			Input	0.41	0.45	0.50	0.44	0.59	0.62	0.67	0.78	1.11	1.31	1.20	1.17	0.75
18K	69.8°F (21°C)	59°F (15°C)	TC	18.20	17.71	17.21	15.56	15.71	16.44	14.63	14.92	14.78	14.36	11.25	9.23	6.66
			SC	13.65	13.28	12.91	11.23	11.45	11.80	10.73	10.84	10.79	10.77	9.42	8.65	6.65
			Input	0.50	0.56	0.62	0.68	0.70	0.63	0.84	1.36	1.32	1.55	1.33	1.32	1.23
	75.2°F (24°C)	62.6°F (17°C)	TC	19.82	19.33	18.84	17.18	17.33	18.06	16.25	16.54	16.40	15.98	12.87	10.85	8.28
			SC	14.85	14.48	14.11	12.88	12.98	13.53	12.18	12.39	12.29	11.97	9.64	8.13	6.21
			Input	0.55	0.61	0.67	0.73	0.74	0.68	0.89	1.40	1.37	1.60	1.38	1.36	1.28
	80.6°F (27°C)	66.2°F (19°C)	TC	21.39	20.90	20.41	18.75	18.90	19.63	17.82	18.11	17.97	17.55	14.44	12.42	9.85
			SC	15.72	15.36	15.00	13.79	13.89	14.43	13.10	13.31	13.21	12.90	10.61	9.13	7.24
			Input	0.60	0.66	0.72	0.77	0.79	0.72	0.93	1.45	1.41	1.64	1.42	1.41	1.32
	89.6°F (32°C)	73.4°F (23°C)	TC	24.33	23.84	23.34	21.69	21.83	22.57	20.76	21.05	20.91	20.49	17.38	15.36	12.79
			SC	16.11	15.78	15.46	14.36	14.46	14.94	13.75	13.94	13.85	13.57	11.51	10.17	8.47
			Input	0.67	0.73	0.79	0.85	0.87	0.80	1.01	1.53	1.49	1.72	1.50	1.49	1.40
24K	69.8°F (21°C)	59°F (15°C)	TC	23.15	23.07	22.99	22.21	21.68	21.47	23.77	26.21	24.98	23.18	21.89	19.58	18.65
			SC	16.32	16.26	16.21	15.94	15.34	15.32	16.69	17.91	17.27	16.34	15.74	14.41	14.17
			Input	1.88	1.90	1.92	2.06	2.05	2.06	1.89	1.66	1.74	2.03	2.21	2.31	2.54
	75.2°F (24°C)	62.6°F (17°C)	TC	21.04	20.96	20.88	20.10	19.57	19.36	21.66	24.10	22.87	21.07	19.78	17.47	16.54
			SC	15.87	15.81	15.75	15.16	14.76	14.61	16.34	18.18	17.25	15.90	14.92	13.18	12.48
			Input	2.27	2.29	2.31	2.45	2.44	2.45	2.28	2.05	2.12	2.41	2.59	2.70	2.93
	80.6°F (27°C)	66.2°F (19°C)	TC	21.23	21.14	21.06	20.28	19.75	19.54	21.84	24.28	23.05	21.26	19.96	17.65	16.72
			SC	16.20	16.14	16.07	15.48	15.07	14.91	16.67	18.53	17.59	16.22	15.23	13.47	12.76
			Input	2.47	2.48	2.50	2.64	2.63	2.64	2.47	2.25	2.32	2.61	2.79	2.89	3.12
	89.6°F (32°C)	73.4°F (23°C)	TC	22.04	21.96	21.88	21.10	20.56	20.36	22.66	25.10	23.87	22.07	20.78	18.46	17.54
			SC	16.04	15.98	15.92	15.35	14.97	14.82	16.49	18.27	17.37	16.06	15.12	13.44	12.76
			Input	2.80	2.81	2.83	2.97	2.96	2.97	2.80	2.58	2.65	2.94	3.12	3.22	3.46

LEGEND

DB - Dry Bulb

WB - Wet Bulb

TC - Total Net Capacity (1000 Btu/hour)

SC - Sensible Capacity (1000 Btu/hour)

Input - Total Power (kW)

HEATING PERFORMANCE - CASSETTE

MODEL	HEATING INDOOR CONDITIONS DB		OUTDOOR CONDITIONS (DB)											
			-22°F (-30°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	19.4°F (-7°C)	24.8°F (-4°C)	32°F (0°C)	39.2°F (4°C)	44.6°F (7°C)	53.6°F (12°C)
9K	59°F (15°C)	TC	5.23	7.65	9.31	10.43	11.52	13.72	14.05	13.97	15.75	18.01	15.06	14.69
		Input	1.32	1.42	1.54	1.67	1.73	1.98	1.93	2.08	1.97	2.28	1.43	1.17
		COP	1.17	1.58	1.78	1.83	1.95	2.03	2.13	1.97	2.35	2.32	3.08	3.68
	64.4°F (18°C)	TC	5.22	7.64	9.30	10.42	11.51	13.71	14.04	13.96	15.74	18.00	15.05	14.68
		Input	1.35	1.45	1.57	1.70	1.76	2.01	1.96	2.11	2.00	2.31	1.47	1.20
		COP	1.13	1.54	1.74	1.80	1.91	2.00	2.10	1.94	2.31	2.29	3.01	3.58
	69°F (20.5°C)	TC	5.22	7.63	9.29	10.41	11.51	13.70	14.04	13.96	15.74	17.99	15.04	14.68
		Input	1.32	1.42	1.54	1.67	1.73	1.98	1.93	2.08	1.97	2.28	1.43	1.17
		COP	1.17	1.58	1.78	1.83	1.95	2.03	2.13	1.97	2.35	2.32	3.08	3.68
	71.6°F (22°C)	TC	4.25	6.66	8.32	9.44	10.53	12.73	13.07	12.99	14.77	17.02	14.07	13.70
		Input	1.39	1.50	1.61	1.74	1.81	2.06	2.01	2.15	2.04	2.35	1.51	1.25
		COP	0.89	1.30	1.51	1.59	1.71	1.81	1.91	1.77	2.12	2.12	2.73	3.22
12K	59°F (15°C)	TC	5.75	8.02	9.96	11.17	11.99	14.26	13.53	14.87	16.33	17.70	14.30	16.01
		Input	1.46	1.52	1.67	1.72	1.74	1.72	1.63	1.72	1.72	1.76	1.22	1.25
		COP	1.16	1.55	1.75	1.91	2.02	2.44	2.43	2.53	2.77	2.95	3.43	3.74
	64.4°F (18°C)	TC	5.81	8.08	10.02	11.23	12.05	14.32	13.58	14.93	16.39	17.76	14.36	16.07
		Input	1.46	1.52	1.67	1.72	1.74	1.72	1.63	1.72	1.72	1.76	1.22	1.25
		COP	1.17	1.56	1.76	1.92	2.03	2.45	2.44	2.54	2.78	2.96	3.44	3.75
	69°F (20.5°C)	TC	5.86	8.13	10.07	11.28	12.10	14.37	13.63	14.98	16.44	17.81	14.41	16.12
		Input	1.46	1.52	1.67	1.72	1.74	1.72	1.64	1.72	1.73	1.76	1.22	1.26
		COP	1.18	1.57	1.77	1.92	2.04	2.45	2.44	2.55	2.79	2.97	3.45	3.76
	71.6°F (22°C)	TC	5.89	8.16	10.10	11.31	12.13	14.40	13.66	15.01	16.46	17.84	14.44	16.15
		Input	1.46	1.52	1.67	1.72	1.74	1.72	1.64	1.72	1.73	1.76	1.22	1.26
		COP	1.18	1.58	1.77	1.93	2.05	2.46	2.45	2.55	2.80	2.97	3.46	3.77
18K	59°F (15°C)	TC	10.73	13.19	16.59	16.99	18.75	22.87	20.72	24.93	21.75	23.38	22.11	22.72
		Input	1.98	2.34	2.62	2.58	2.84	3.15	3.05	3.27	2.45	2.31	1.96	1.76
		COP	1.58	1.65	1.85	1.93	1.93	2.13	1.99	2.23	2.61	2.96	3.31	3.78
	64.4°F (18°C)	TC	10.16	12.62	16.03	16.43	18.18	22.30	20.15	24.36	21.19	22.82	21.54	22.15
		Input	1.97	2.32	2.61	2.56	2.82	3.13	3.03	3.25	2.43	2.30	1.94	1.79
		COP	1.51	1.60	1.80	1.88	1.89	2.09	1.95	2.19	2.56	2.91	3.25	3.62
	69°F (20.5°C)	TC	9.68	12.14	15.54	15.94	17.70	21.82	19.67	23.88	20.70	22.33	21.06	21.67
		Input	1.95	2.31	2.59	2.55	2.81	3.12	3.02	3.24	2.41	2.28	1.93	1.76
		COP	1.45	1.54	1.76	1.84	1.85	2.05	1.91	2.16	2.51	2.87	3.20	3.78
	71.6°F (22°C)	TC	9.41	11.87	15.27	15.67	17.42	21.54	19.39	23.61	20.43	22.06	20.79	21.46
		Input	1.95	2.30	2.58	2.54	2.80	3.11	3.01	3.23	2.41	2.27	1.92	1.84
		COP	1.42	1.51	1.73	1.81	1.82	2.03	1.89	2.14	2.49	2.84	3.18	3.42
24K	59°F (15°C)	TC	14.80	18.20	23.64	24.95	26.50	26.55	26.91	30.53	34.20	33.37	30.87	30.94
		Input	2.83	3.33	3.60	3.50	3.64	3.26	3.29	3.62	3.75	3.46	2.54	2.19
		COP	1.53	1.60	1.93	2.09	2.13	2.39	2.39	2.47	2.68	2.83	3.56	4.14
	64.4°F (18°C)	TC	14.89	18.30	23.74	25.04	26.59	26.64	27.00	30.62	34.29	33.47	30.96	31.04
		Input	2.90	3.40	3.67	3.57	3.71	3.33	3.37	3.69	3.82	3.53	2.61	2.26
		COP	1.51	1.58	1.90	2.05	2.10	2.34	2.35	2.43	2.63	2.78	3.48	4.02
	69°F (20.5°C)	TC	14.97	18.37	23.81	25.12	26.67	26.72	27.08	30.70	34.37	33.54	31.04	31.12
		Input	2.83	3.33	3.60	3.50	3.64	3.26	3.29	3.62	3.75	3.46	2.54	2.19
		COP	1.53	1.60	1.93	2.09	2.13	2.39	2.39	2.47	2.68	2.83	3.56	4.14
	71.6°F (22°C)	TC	11.94	15.34	20.78	22.09	23.63	23.69	24.05	27.66	31.33	30.51	28.01	28.08
		Input	2.99	3.49	3.76	3.67	3.80	3.43	3.46	3.79	3.91	3.63	2.71	2.36
		COP	1.17	1.29	1.62	1.76	1.82	2.03	2.04	2.14	2.35	2.47	3.03	3.49

LEGEND

DB - Dry Bulb
 TC - Total Net Capacity (1000 Btu/hour)
 Input - Total Power (kW)
 COP - W/W

COOLING PERFORMANCE - DUCTED

MODEL	COOLING			OUTDOOR CONDITIONS (DB)												
	INDOOR CONDITIONS DB WB			(-22°F) (-25°C)	(-13°F) (-25°C)	(-4°F) (-20°C)	(0°F) (-17°C)	(5°F) (-15°C)	(17°F) (-8°C)	(47°F) (8°C)	(77°F) (25°C)	(86°F) (30°C)	(95°F) (35°C)	(104°F) (40°C)	(113°F) (45°C)	(122°F) (50°C)
09K	69.8°F (21°C)	59°F (15°C)	TC	9.94	9.84	9.73	9.25	9.24	7.96	10.57	10.10	9.59	10.32	9.25	8.02	4.73
			SC	6.68	6.61	6.54	6.36	6.36	5.72	7.05	6.81	6.59	6.93	6.37	5.75	4.39
			Input	0.08	0.14	0.20	0.23	0.22	0.28	0.59	0.72	0.79	1.10	1.09	1.06	0.69
	75.2°F (24°C)	62.6°F (17°C)	TC	10.23	10.13	10.02	9.54	9.53	8.25	10.86	10.39	9.88	10.61	9.54	8.31	5.02
			SC	7.00	6.92	6.85	6.52	6.52	5.64	7.42	7.11	6.75	7.25	6.52	5.68	3.43
			Input	0.01	0.07	0.13	0.15	0.15	0.20	0.52	0.65	0.72	1.03	1.01	0.98	0.61
	80.6°F (27°C)	66.2°F (19°C)	TC	10.93	10.82	10.72	10.23	10.22	8.95	11.55	11.09	10.57	11.30	10.24	9.00	5.71
			SC	7.35	7.28	7.21	6.88	6.88	6.02	7.77	7.46	7.11	7.61	6.89	6.06	3.84
			Input	0.00	0.06	0.12	0.15	0.14	0.20	0.51	0.64	0.71	1.03	1.01	0.98	0.61
	89.6°F (32°C)	73.4°F (23°C)	TC	12.49	12.38	12.28	11.79	11.78	10.51	13.11	12.65	12.13	12.86	11.80	10.56	7.27
			SC	7.64	7.58	7.51	7.22	7.21	6.43	8.02	7.74	7.42	7.87	7.22	6.46	4.45
			Input	0.03	0.09	0.15	0.18	0.17	0.23	0.54	0.67	0.74	1.06	1.04	1.01	0.64
12K	69.8°F (21°C)	59°F (15°C)	TC	11.90	11.76	11.62	10.53	10.14	12.21	10.60	11.41	12.60	12.55	10.74	9.24	5.40
			SC	8.25	8.16	8.06	7.70	7.59	8.54	7.78	8.08	8.69	8.70	7.84	7.17	5.40
			Input	0.32	0.37	0.42	0.40	0.47	0.58	0.50	0.75	1.07	1.26	1.14	1.10	0.71
	75.2°F (24°C)	62.6°F (17°C)	TC	12.85	12.71	12.57	11.48	11.09	13.16	11.55	12.36	13.55	13.49	11.69	10.19	6.35
			SC	8.77	8.67	8.58	7.83	7.57	8.98	7.88	8.43	9.24	9.21	7.98	6.95	4.33
			Input	0.32	0.37	0.42	0.40	0.48	0.59	0.51	0.75	1.07	1.27	1.15	1.11	0.71
	80.6°F (27°C)	66.2°F (19°C)	TC	13.82	13.68	13.54	12.45	12.07	14.14	12.52	13.33	14.52	14.47	12.67	11.16	7.32
			SC	9.22	9.13	9.03	8.30	8.05	9.43	8.35	8.89	9.68	9.65	8.45	7.44	4.88
			Input	0.34	0.38	0.43	0.42	0.49	0.60	0.52	0.76	1.08	1.28	1.16	1.12	0.72
	89.6°F (32°C)	73.4°F (23°C)	TC	15.67	15.53	15.40	14.30	13.92	15.99	14.37	15.18	16.37	16.32	14.52	13.01	9.17
			SC	10.50	10.40	10.31	9.58	9.32	10.71	9.62	10.17	10.96	10.93	9.72	8.71	6.14
			Input	0.36	0.41	0.45	0.44	0.51	0.62	0.54	0.78	1.10	1.30	1.18	1.14	0.75
18K	69.8°F (21°C)	59°F (15°C)	TC	19.53	19.00	18.47	16.70	16.85	17.64	15.70	16.01	15.87	15.41	12.07	9.91	7.15
			SC	14.65	14.25	13.86	12.05	12.29	12.67	11.52	11.63	11.58	11.56	10.11	9.29	7.14
			Input	0.53	0.60	0.66	0.72	0.73	0.66	0.89	1.43	1.40	1.63	1.40	1.39	1.30
	75.2°F (24°C)	62.6°F (17°C)	TC	21.27	20.74	20.21	18.44	18.59	19.38	17.44	17.75	17.60	17.15	13.81	11.65	8.89
			SC	15.94	15.54	15.15	13.82	13.93	14.52	13.07	13.30	13.19	12.85	10.35	8.73	6.66
			Input	0.58	0.65	0.71	0.77	0.79	0.71	0.94	1.48	1.45	1.69	1.45	1.44	1.35
	80.6°F (27°C)	66.2°F (19°C)	TC	22.95	22.43	21.90	20.12	20.28	21.07	19.13	19.43	19.29	18.83	15.50	13.33	10.57
			SC	16.88	16.49	16.10	14.79	14.91	15.49	14.06	14.29	14.18	13.85	11.39	9.80	7.77
			Input	0.63	0.69	0.76	0.82	0.83	0.76	0.99	1.53	1.49	1.73	1.50	1.49	1.40
	89.6°F (32°C)	73.4°F (23°C)	TC	26.11	25.58	25.05	23.28	23.43	24.22	22.28	22.59	22.44	21.99	18.65	16.49	13.73
			SC	17.29	16.94	16.59	15.41	15.51	16.04	14.75	14.96	14.86	14.56	12.35	10.92	9.09
			Input	0.71	0.78	0.84	0.90	0.91	0.84	1.07	1.61	1.58	1.81	1.58	1.57	1.48
24K	69.8°F (21°C)	59°F (15°C)	TC	31.53	30.71	29.88	24.57	27.20	29.99	28.58	26.53	25.04	22.40	21.34	18.05	10.69
			SC	26.32	25.63	24.94	18.24	17.55	17.53	19.09	20.49	19.76	18.70	18.01	16.49	16.21
			Input	1.96	1.97	1.99	2.14	2.13	2.14	1.96	1.73	1.80	2.10	2.29	2.40	2.64
	75.2°F (24°C)	62.6°F (17°C)	TC	34.44	33.62	32.80	27.48	30.11	32.90	31.50	29.44	27.96	25.31	24.25	20.97	13.61
			SC	25.23	24.62	24.02	20.13	22.06	24.10	23.07	21.56	20.48	18.54	17.76	15.36	9.97
			Input	2.36	2.37	2.39	2.54	2.53	2.54	2.36	2.13	2.20	2.50	2.69	2.80	3.04
	80.6°F (27°C)	66.2°F (19°C)	TC	37.22	36.40	35.58	30.26	32.90	35.68	34.28	32.22	30.74	28.10	27.03	23.75	16.39
			SC	25.17	24.61	24.05	20.46	22.24	24.12	23.17	21.78	20.78	18.99	18.28	16.06	11.08
			Input	2.56	2.58	2.59	2.74	2.73	2.74	2.56	2.33	2.40	2.71	2.89	3.00	3.24
	89.6°F (32°C)	73.4°F (23°C)	TC	42.44	41.62	40.80	35.48	38.11	40.90	39.49	37.44	35.95	33.31	32.25	28.96	21.60
			SC	28.85	28.29	27.73	24.12	25.91	27.80	26.84	25.45	24.44	22.64	21.92	19.69	14.68
			Input	2.90	2.92	2.94	3.08	3.08	3.08	2.91	2.68	2.75	3.05	3.24	3.34	3.59

LEGEND

DB - Dry Bulb

WB - Wet Bulb

TC - Total Net Capacity (1000 Btu/hour)

SC - Sensible Capacity (1000 Btu/hour)

Input - Total Power (kW)

HEATING PERFORMANCE - DUCTED

MODEL	HEATING		OUTDOOR CONDITIONS (DB)											
	Indoor Conditions DB		-22°F (-30°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	19.4°F (-7°C)	24.8°F (-4°C)	32°F (0°C)	39.2°F (4°C)	44.6°F (7°C)	53.6°F (12°C)
09K	59°F (15°C)	TC	5.43	7.05	9.61	10.86	10.83	13.82	14.18	14.73	16.31	18.97	16.04	15.47
		Input	1.39	1.45	1.43	1.51	1.51	1.70	1.73	1.77	1.81	2.08	1.36	1.13
		COP	1.15	1.42	1.97	2.11	2.10	2.37	2.39	2.43	2.63	2.67	3.47	4.02
	64.4°F (18°C)	TC	5.47	7.08	9.64	10.90	10.87	13.85	14.21	14.76	16.34	19.00	16.07	15.51
		Input	1.42	1.49	1.46	1.54	1.55	1.74	1.77	1.80	1.85	2.11	1.39	1.16
		COP	1.13	1.40	1.93	2.07	2.06	2.34	2.36	2.40	2.59	2.63	3.39	3.91
	69°F (20.5°C)	TC	5.50	7.11	9.67	10.93	10.90	13.88	14.24	14.79	16.37	19.03	16.10	15.53
		Input	1.39	1.45	1.43	1.51	1.51	1.70	1.73	1.77	1.81	2.08	1.36	1.13
		COP	1.15	1.42	1.97	2.11	2.10	2.37	2.39	2.43	2.63	2.67	3.47	4.02
	71.6°F (22°C)	TC	4.25	5.86	8.42	9.67	9.65	12.63	12.99	13.54	15.12	17.78	14.85	14.28
		Input	1.47	1.53	1.51	1.59	1.59	1.78	1.81	1.85	1.89	2.16	1.44	1.21
		COP	0.85	1.12	1.63	1.78	1.78	2.08	2.10	2.14	2.34	2.41	3.03	3.47
12K	59°F (15°C)	TC	6.24	7.85	10.63	11.81	12.65	13.82	14.25	14.66	15.36	18.19	15.55	15.48
		Input	1.40	1.55	1.70	1.74	1.79	1.64	1.67	1.69	1.65	2.00	1.35	1.12
		COP	1.31	1.48	1.83	1.99	2.07	2.47	2.50	2.55	2.73	2.67	3.38	4.04
	64.4°F (18°C)	TC	6.25	7.86	10.64	11.82	12.66	13.83	14.26	14.68	15.38	18.20	15.56	15.49
		Input	1.40	1.55	1.70	1.74	1.79	1.64	1.67	1.69	1.65	2.00	1.35	1.13
		COP	1.31	1.48	1.83	1.99	2.07	2.47	2.50	2.55	2.73	2.67	3.38	4.04
	69°F (20.5°C)	TC	6.26	7.87	10.65	11.83	12.67	13.84	14.27	14.69	15.38	18.21	15.57	15.50
		Input	1.40	1.55	1.70	1.74	1.79	1.64	1.67	1.69	1.65	2.00	1.35	1.13
		COP	1.31	1.48	1.83	2.00	2.07	2.47	2.50	2.55	2.73	2.67	3.38	4.03
	71.6°F (22°C)	TC	6.27	7.87	10.65	11.83	12.68	13.85	14.27	14.69	15.39	18.21	15.57	15.51
		Input	1.40	1.55	1.70	1.74	1.79	1.64	1.67	1.69	1.65	2.00	1.35	1.13
		COP	1.31	1.49	1.83	2.00	2.07	2.47	2.50	2.55	2.73	2.67	3.38	4.03
18K	59°F (15°C)	TC	11.25	13.83	17.40	17.82	19.66	23.98	21.73	26.15	22.81	24.52	23.19	22.72
		Input	1.90	2.23	2.50	2.46	2.71	3.01	2.91	3.12	2.34	2.21	1.87	1.76
		COP	1.74	1.82	2.04	2.12	2.12	2.34	2.19	2.45	2.86	3.25	3.64	3.78
	64.4°F (18°C)	TC	10.66	13.24	16.81	17.23	19.07	23.39	21.13	25.55	22.22	23.93	22.59	22.13
		Input	1.88	2.22	2.49	2.45	2.70	2.99	2.89	3.11	2.32	2.19	1.85	1.79
		COP	1.66	1.75	1.98	2.06	2.07	2.29	2.14	2.41	2.81	3.20	3.57	3.62
	69°F (20.5°C)	TC	10.15	12.73	16.30	16.72	18.56	22.88	20.63	25.05	21.71	23.42	22.09	21.62
		Input	1.87	2.20	2.48	2.43	2.68	2.98	2.88	3.09	2.31	2.18	1.84	1.76
		COP	1.59	1.69	1.93	2.02	2.03	2.25	2.10	2.37	2.76	3.15	3.52	3.78
	71.6°F (22°C)	TC	9.87	12.45	16.01	16.43	18.27	22.59	20.34	24.76	21.43	23.14	21.80	21.40
		Input	1.86	2.19	2.47	2.42	2.68	2.97	2.87	3.09	2.30	2.17	1.83	1.83
		COP	1.56	1.66	1.90	1.99	2.00	2.23	2.08	2.35	2.73	3.12	3.49	3.42
24K	59°F (15°C)	TC	15.46	19.02	24.71	26.07	27.69	27.74	28.12	31.90	35.73	34.87	32.26	32.33
		Input	2.53	2.98	3.22	3.14	3.26	2.92	2.95	3.24	3.35	3.10	2.27	1.96
		COP	1.79	1.87	2.25	2.44	2.49	2.79	2.79	2.88	3.12	3.30	4.16	4.83
	64.4°F (18°C)	TC	15.56	19.12	24.80	26.17	27.78	27.84	28.22	31.99	35.83	34.97	32.36	32.43
		Input	2.53	2.98	3.22	3.14	3.26	2.92	2.95	3.25	3.36	3.10	2.28	1.96
		COP	1.80	1.88	2.25	2.44	2.50	2.79	2.80	2.89	3.13	3.30	4.17	4.84
	69°F (20.5°C)	TC	15.64	19.20	24.88	26.25	27.86	27.92	28.30	32.08	35.91	35.05	32.44	32.51
		Input	2.54	2.98	3.23	3.14	3.26	2.92	2.95	3.25	3.36	3.10	2.28	1.97
		COP	1.81	1.89	2.26	2.45	2.50	2.80	2.81	2.89	3.13	3.31	4.17	4.85
	71.6°F (22°C)	TC	15.69	19.25	24.93	26.30	27.91	27.97	28.34	32.12	35.96	35.10	32.48	32.56
		Input	2.54	2.98	3.23	3.14	3.26	2.92	2.96	3.25	3.36	3.11	2.28	1.97
		COP	1.81	1.89	2.26	2.45	2.51	2.80	2.81	2.90	3.14	3.31	4.18	4.85

LEGEND

DB - Dry Bulb

TC - Total Net Capacity (1000 Btu/hour)

Input - Total Power (kW)

COP - W/W

COOLING PERFORMANCE - CONSOLE

MODEL	COOLING			OUTDOOR CONDITIONS (DB)												
	Indoor Conditions DB	WB		(-22°F (-25°C))	(-13°F (-25°C))	(-4°F (-20°C))	(0°F (-17°C))	(5°F (-15°C))	(17°F (-8°C))	(47°F (8°C))	(77°F (25°C))	(86°F (30°C))	(95°F (35°C))	(104°F (40°C))	(113°F (45°C))	(122°F (50°C))
12K	69.8°F (21°C)	59°F (15°C)	TC	11.56	11.38	11.20	10.46	10.20	10.74	10.46	10.77	10.67	10.65	10.23	8.81	4.90
			SC	7.86	7.74	7.62	7.14	7.02	7.28	7.12	7.33	7.26	7.24	6.97	6.32	4.63
			Input	0.37	0.41	0.45	0.52	0.47	0.58	0.47	0.68	0.80	0.96	1.10	1.07	0.68
	75.2°F (24°C)	62.6°F (17°C)	TC	13.50	13.32	13.14	12.41	12.14	12.69	12.41	12.72	12.62	12.59	12.17	10.76	6.85
			SC	9.10	8.97	8.85	8.36	8.18	8.55	8.36	8.57	8.50	8.48	8.20	7.25	4.61
			Input	0.60	0.63	0.67	0.74	0.69	0.80	0.69	0.90	1.02	1.18	1.32	1.29	0.90
	80.6°F (27°C)	66.2°F (19°C)	TC	15.01	14.83	14.65	13.92	13.65	14.20	13.92	14.23	14.13	14.10	13.68	12.27	8.36
			SC	9.79	9.67	9.56	9.08	8.90	9.26	9.08	9.28	9.21	9.20	8.92	8.00	5.45
			Input	0.72	0.75	0.79	0.86	0.81	0.93	0.81	1.02	1.14	1.30	1.44	1.41	1.02
	89.6°F (32°C)	73.4°F (23°C)	TC	18.02	17.84	17.67	16.93	16.66	17.21	16.93	17.24	17.14	17.11	16.69	15.28	11.37
			SC	10.29	10.19	10.09	9.67	9.52	9.83	9.67	9.85	9.79	9.77	9.53	8.73	6.49
			Input	0.96	0.99	1.03	1.10	1.05	1.17	1.05	1.26	1.38	1.54	1.68	1.65	1.26
18K	69.8°F (21°C)	59°F (15°C)	TC	20.67	20.11	19.56	17.68	17.84	18.68	16.62	16.95	16.79	16.31	12.78	10.49	7.57
			SC	15.51	15.09	14.67	12.76	13.01	13.41	12.19	12.31	12.26	12.24	10.70	9.83	7.56
			Input	0.54	0.61	0.67	0.74	0.75	0.68	0.91	1.47	1.43	1.67	1.43	1.42	1.33
	75.2°F (24°C)	62.6°F (17°C)	TC	22.51	21.96	21.40	19.52	19.68	20.52	18.46	18.79	18.63	18.15	14.62	12.33	9.41
			SC	16.87	16.45	16.03	14.63	14.75	15.37	13.84	14.08	13.96	13.60	10.95	9.24	7.05
			Input	0.60	0.66	0.73	0.79	0.80	0.73	0.96	1.52	1.48	1.72	1.49	1.47	1.38
	80.6°F (27°C)	66.2°F (19°C)	TC	24.30	23.74	23.18	21.30	21.47	22.30	20.25	20.57	20.42	19.94	16.40	14.11	11.19
			SC	17.86	17.45	17.04	15.66	15.78	16.39	14.89	15.12	15.01	14.66	12.06	10.38	8.23
			Input	0.64	0.71	0.77	0.84	0.85	0.78	1.01	1.57	1.53	1.77	1.53	1.52	1.43
	89.6°F (32°C)	73.4°F (23°C)	TC	27.64	27.08	26.52	24.64	24.80	25.64	23.59	23.91	23.76	23.27	19.74	17.45	14.53
			SC	20.42	20.01	19.59	18.20	18.33	18.94	17.43	17.67	17.55	17.20	14.59	12.89	10.73
			Input	0.73	0.79	0.86	0.92	0.94	0.86	1.09	1.65	1.61	1.86	1.62	1.61	1.51
24K	69.8°F (21°C)	59°F (15°C)	TC	25.58	25.49	25.40	24.53	23.95	23.72	26.26	28.95	27.59	25.61	24.18	21.63	20.60
			SC	18.03	17.96	17.90	17.61	16.94	16.92	18.43	19.79	19.08	18.05	17.39	15.92	15.65
			Input	1.96	1.98	2.00	2.15	2.14	2.15	1.97	1.73	1.81	2.11	2.30	2.41	2.65
	75.2°F (24°C)	62.6°F (17°C)	TC	23.23	23.14	23.05	22.19	21.60	21.37	23.91	26.61	25.25	23.26	21.83	19.28	18.25
			SC	17.52	17.46	17.39	16.74	16.29	16.12	18.04	20.07	19.05	17.55	16.47	14.54	13.77
			Input	2.37	2.38	2.40	2.55	2.54	2.55	2.37	2.14	2.21	2.51	2.70	2.81	3.05
	80.6°F (27°C)	66.2°F (19°C)	TC	23.42	23.33	23.24	22.37	21.78	21.56	24.10	26.79	25.43	23.45	22.02	19.46	18.44
			SC	17.87	17.80	17.73	17.07	16.62	16.45	18.39	20.44	19.41	17.89	16.80	14.85	14.07
			Input	2.57	2.59	2.60	2.75	2.74	2.75	2.57	2.34	2.41	2.72	2.90	3.01	3.25
	89.6°F (32°C)	73.4°F (23°C)	TC	24.29	24.20	24.11	23.25	22.66	22.43	24.97	27.67	26.31	24.32	22.89	20.34	19.31
			SC	17.68	17.61	17.55	16.92	16.49	16.33	18.18	20.14	19.15	17.70	16.66	14.80	14.06
			Input	2.91	2.93	2.95	3.10	3.09	3.10	2.92	2.69	2.76	3.06	3.25	3.36	3.60

LEGEND

DB - Dry Bulb

WB - Wet Bulb

TC - Total Net Capacity (1000 Btu/hour)

SC - Sensible Capacity (1000 Btu/hour)

Input - Total Power (kW)

HEATING PERFORMANCE - CONSOLE

MODEL	HEATING		OUTDOOR CONDITIONS (DB)											
	Indoor Conditions DB		-22°F (-30°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	19.4°F (-7°C)	24.8°F (-4°C)	32°F (0°C)	39.2°F (4°C)	44.6°F (7°C)	53.6°F (12°C)
12K	59°F (15°C)	TC	5.70	6.00	10.42	11.53	12.30	13.48	13.93	14.55	15.90	11.91	14.27	14.66
		Input	1.44	1.39	1.69	1.75	1.80	1.60	1.69	1.69	1.69	1.48	1.27	1.07
		COP	1.16	1.27	1.81	1.94	2.01	2.46	2.42	2.53	2.76	2.36	3.30	4.03
	64.4°F (18°C)	TC	5.81	6.10	10.52	11.64	12.41	13.58	14.03	14.66	16.00	12.02	14.38	14.76
		Input	1.49	1.44	1.75	1.80	1.85	1.66	1.74	1.74	1.74	1.54	1.32	1.12
		COP	1.14	1.24	1.77	1.90	1.96	2.40	2.36	2.47	2.69	2.29	3.19	3.86
	69°F (20.5°C)	TC	5.90	6.19	10.61	11.72	12.49	13.67	14.12	14.74	16.09	12.11	14.46	14.85
		Input	1.44	1.39	1.69	1.75	1.80	1.60	1.69	1.69	1.69	1.48	1.27	1.07
		COP	1.16	1.27	1.81	1.94	2.01	2.46	2.42	2.53	2.76	2.36	3.30	4.03
	71.6°F (22°C)	TC	5.86	6.16	10.58	11.69	12.46	13.64	14.09	14.71	16.06	12.07	14.43	14.82
		Input	1.57	1.51	1.82	1.87	1.93	1.73	1.82	1.81	1.82	1.61	1.39	1.19
		COP	1.10	1.19	1.70	1.83	1.90	2.31	2.27	2.38	2.59	2.20	3.04	3.64
18K	59°F (15°C)	TC	10.99	13.51	17.00	17.41	19.20	23.42	21.22	25.54	22.28	23.95	22.65	23.28
		Input	1.90	2.23	2.50	2.46	2.71	3.01	2.91	3.12	2.33	2.21	1.87	1.68
		COP	1.70	1.78	1.99	2.07	2.07	2.28	2.14	2.40	2.80	3.18	3.55	4.06
	64.4°F (18°C)	TC	10.41	12.93	16.42	16.83	18.62	22.84	20.64	24.96	21.70	23.37	22.07	22.70
		Input	1.88	2.21	2.49	2.44	2.70	2.99	2.89	3.11	2.32	2.19	1.85	1.71
		COP	1.62	1.71	1.93	2.02	2.02	2.24	2.09	2.35	2.74	3.12	3.49	3.89
	69°F (20.5°C)	TC	9.92	12.44	15.92	16.33	18.13	22.35	20.15	24.46	21.21	22.88	21.57	22.20
		Input	1.87	2.20	2.47	2.43	2.68	2.98	2.88	3.09	2.31	2.18	1.84	1.68
		COP	1.56	1.66	1.89	1.97	1.98	2.20	2.05	2.32	2.70	3.08	3.44	4.06
	71.6°F (22°C)	TC	9.64	12.16	15.64	16.05	17.85	22.07	19.87	24.18	20.93	22.60	21.29	21.99
		Input	1.86	2.19	2.47	2.42	2.68	2.97	2.87	3.09	2.30	2.17	1.83	1.76
		COP	1.52	1.62	1.86	1.94	1.96	2.18	2.03	2.30	2.67	3.05	3.41	3.67
24K	59°F (15°C)	TC	15.30	18.82	24.45	25.80	27.39	27.45	27.82	31.56	35.36	34.51	31.92	31.99
		Input	2.89	3.40	3.68	3.58	3.72	3.33	3.37	3.70	3.83	3.54	2.60	2.24
		COP	1.55	1.62	1.95	2.11	2.16	2.41	2.42	2.50	2.71	2.86	3.60	4.19
	64.4°F (18°C)	TC	15.40	18.92	24.54	25.89	27.49	27.55	27.92	31.66	35.45	34.60	32.02	32.09
		Input	2.89	3.40	3.68	3.58	3.72	3.33	3.37	3.71	3.83	3.54	2.60	2.24
		COP	1.56	1.63	1.95	2.12	2.16	2.42	2.43	2.50	2.71	2.86	3.61	4.19
	69°F (20.5°C)	TC	15.48	19.00	24.62	25.98	27.57	27.63	28.00	31.74	35.53	34.68	32.10	32.17
		Input	2.90	3.41	3.68	3.58	3.72	3.34	3.37	3.71	3.83	3.54	2.60	2.24
		COP	1.57	1.63	1.96	2.12	2.17	2.43	2.43	2.51	2.72	2.87	3.62	4.20
	71.6°F (22°C)	TC	15.52	19.04	24.67	26.02	27.62	27.67	28.05	31.78	35.58	34.73	32.14	32.22
		Input	2.90	3.41	3.69	3.59	3.73	3.34	3.37	3.71	3.84	3.54	2.60	2.25
		COP	1.57	1.64	1.96	2.13	2.17	2.43	2.44	2.51	2.72	2.87	3.62	4.20

LEGEND

DB - Dry Bulb

TC - Total Net Capacity (1000 Btu/hour)

Input - Total Power (kW)

COP - W/W

COOLING PERFORMANCE - AIR HANDLER

MODEL	COOLING			OUTDOOR CONDITIONS (DB)										
	Indoor Conditions DB	WB		-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	47°F (8°C)	77°F (25°C)	86°F (30°C)	95°F (35°C)	104°F (40°C)	113°F (45°C)	122°F (50°C)
24K (208-230V)	69.8°F (21°C)	59°F (15°C)	TC	22,815	22,600	22,342	23,124	21,958	24,817	23,919	22,780	21,028	17,969	11,949
			SC	18,086	18,000	17,800	18,430	17,512	19,524	18,848	18,497	17,396	14,866	11,806
			Input	1.223	1.254	1.289	1.143	1.137	1.874	2.199	2.543	2.544	2.214	1.865
	75.2°F (24°C)	62.6°F (17°C)	TC	24,640	24,408	24,130	24,974	23,715	26,802	25,833	24,603	22,710	19,406	12,905
			SC	19,533	19,441	19,224	19,905	18,913	21,086	20,356	19,977	18,788	16,055	12,750
			Input	1.236	1.266	1.302	1.154	1.148	1.893	2.221	2.568	2.570	2.237	1.884
	80.6°F (27°C)	66.2°F (19°C)	TC	26,465	26,216	25,917	26,824	25,472	28,539	27,746	26,425	24,170	20,844	13,861
			SC	20,980	20,881	20,648	21,379	20,314	22,453	21,864	21,457	19,996	17,244	13,695
			Input	1.248	1.279	1.315	1.166	1.160	1.911	2.243	2.594	2.596	2.259	1.902
	89.6°F (32°C)	73.4°F (23°C)	TC	27,834	27,572	27,258	28,212	26,789	30,276	29,181	27,792	26,074	21,922	14,577
			SC	22,065	21,961	21,716	22,485	21,365	23,820	22,995	22,567	21,571	18,136	14,403
			Input	1.260	1.291	1.328	1.177	1.171	1.930	2.265	2.619	2.622	2.281	1.921

LEGEND

DB --- Dry Bulb
 WB --- Wet Bulb
 TC --- Total Net Capacity (1000 Btu/hour)
 SC --- Sensible Capacity (1000 Btu/hour)
 Input --- Total Power (kW)

HEATING PERFORMANCE - AIR HANDLER

MODEL	HEATING			OUTDOOR CONDITIONS (DB)										
24K (208-230V)	Indoor Conditions DB		-22°F (-30°C)	-13°F (-25°C)	-4°F (-20°C)	0°F (-17°C)	5°F (-15°C)	17°F (-8°C)	19.4°F (-7°C)	24.8°F (-4°C)	32°F (0°C)	39.2°F (4°C)	44.6°F (7°C)	53.6°F (12°C)
	59°F (15°C)	TC	15,786	19,733	22,344	24,185	25,801	27,500	27,692	28,191	32,456	35,839	33,174	31,511
		Input	3.016	3.234	3.454	3.601	3.606	3.566	3.526	3.438	3.014	3.254	2.551	1.903
		COP	1.53	1.79	1.90	1.97	2.10	2.26	2.30	2.40	3.16	3.23	3.81	4.85
	64.4F (18C)	TC	15,352	19,190	21,729	23,519	25,091	26,743	26,930	27,415	31,563	34,852	32,261	30,644
		Input	3.116	3.341	3.568	3.720	3.725	3.683	3.642	3.552	3.113	3.361	2.635	1.966
		COP	1.44	1.68	1.79	1.85	1.97	2.13	2.17	2.26	2.97	3.04	3.59	4.57
	69F (20.5C)	TC	15,207	18,828	21,319	23,075	24,617	26,239	26,422	26,898	30,967	34,195	31,652	30,065
		Input	3.215	3.448	3.682	3.838	3.844	3.801	3.758	3.665	3.213	3.468	2.719	2.029
		COP	1.39	1.60	1.70	1.76	1.88	2.02	2.06	2.15	2.82	2.89	3.41	4.34
	71.6F (22C)	TC	14,483	18,104	20,500	22,188	23,670	25,229	25,406	25,863	29,776	32,879	30,435	28,909
		Input	3.315	3.554	3.795	3.957	3.963	3.919	3.874	3.778	3.312	3.576	2.803	2.092
COP		1.28	1.49	1.58	1.64	1.75	1.89	1.92	2.01	2.63	2.69	3.18	4.05	

LEGEND

DB --- Dry Bulb
 WB --- Wet Bulb
 TC --- Total Net Capacity (1000 Btu/hour)
 Input --- Total Power (kW)
 COP --- (W/W)

APPLICATION DATA

Unit Selections

Select equipment that either matches or supports slightly more than the anticipated peak load. This provides better humidity control, fewer unit cycles, and less part-load operation.

For units used in spaces with high sensible loads, base equipment selection on unit sensible load, not on total anticipated load. Adjust for anticipated room wet bulb temperature to avoid undersizing the equipment.

Unit Mounting (Outdoor)

Refer to the unit's installation instructions for further details.

Unit leveling - For reliable operation, units should be level in all planes.

Clearance - Minimum clearance (see Fig. 7) must be provided for airflow. The condensing units are designed for free-flow application. Air inlets and outlets should not be restricted.

Unit location - A location which is convenient to installation and not exposed to strong winds. A location that can bear the weight of the outdoor unit and where the outdoor unit can be mounted in a level position.

Do not install the indoor or outdoor units in a location with special environmental conditions. For those applications, contact your sales representative.

System Operating Conditions

OPERATING RANGE MIN/MAX °F / °C

All sizes 6-36 (115V and 208/230V):

- Cooling: -22/130 (-30/55)
- Heating: -22/86 (-30/30)

NOTE: Without intervention, the unit may continue to run at temperatures outside of the specified operating temperatures. However, operation outside of the specified temperature range may result in decreased performance and may cause damage to the unit.

METERING DEVICES

The outdoor unit has an electronic expansion valve to manage the refrigerant flow of the connected fan coil.

DRAIN CONNECTIONS

Install drains to meet the local sanitation codes.

REFRIGERANT LINES

General refrigerant line sizing:

1. The outdoor units are shipped with a full charge of R410A refrigerant. All charges, line sizing, and capacities are based on runs of 25 ft. (7.6 m). For runs over 25 ft. (7.6 m), review “Long Line Applications:” on page 26 for the proper charge adjustments.
2. Refrigerant lines should not be buried in the ground. If it is necessary to bury the lines, do not bury more than 36-in (914 mm). Provide a minimum 6-in (152 mm) vertical rise to the service valves to prevent refrigerant migration.
3. Both lines must be insulated. Use a minimum of 1/2-in. (12.7 mm) thick insulation. Closed-cell insulation is recommended in all long-line applications.
4. Special consideration should be given to isolating the interconnecting tubing from the building structure. Isolate the tubing so vibration or noise is not transmitted into the structure.

Long Line Applications:

1. No change in line sizing is required.
2. Add refrigerant per the **Additional Charge Table**.

Additional Charge Table

UNIT SIZE	TOTAL LINE LENGTH FT (M)		ADDITIONAL CHARGE, OZ/FT. FT (M)			
	MIN	MAX	10-25 (3-8)	>25-82 (8-25)	>82-98 (25-30)	>98-213 (30-65)
6	10 (3)	82 (25)	None	0.16		
9						
12						
18		98 (30)		0.16		
24		164 (50)		0.32		
30						
36	213 (65)					



CAUTION

When the outdoor unit is matched with a Multi-Family or Residential Fan Coil and due the need to braze the piping on the fan coil side it is **REQUIRED** to flow Nitrogen in the system while brazing the line set since a filter drier is not recommended to be used with these condensing units.

WIRING

All wires must be sized per NEC (National Electrical Code) or CEC (Canadian Electrical Code) and local codes. Use Electrical Data table MCA (minimum circuit amps) and MOCP (maximum over current protection) to correctly size the wires and the disconnect fuse or breakers respectively.

Recommended Connection Method for Power and Communication Wiring:

The main power is supplied to the outdoor unit. The field supplied 14/3 power/communication wiring, from the outdoor unit to the indoor unit, consists of four (4) wires and provides the power for the indoor unit. Two wires are high voltage AC power, one is communication wiring and the other is a ground wire. Wiring between indoor and outdoor unit is polarity sensitive. The use of BX wire is **NOT** recommended.

If installed in a high Electromagnetic field (EMF) area and communication issues exists, a 14/2 stranded shielded wire can be used to replace L2 and (S) between outdoor unit and indoor unit landing the shield onto ground in the outdoor unit only.



CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Wires should be sized based on NEC and local codes.



CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Be sure to comply with local codes while running wire from the indoor unit to the outdoor unit.

Every wire must be connected firmly. Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Ensure all wiring is tightly connected.

No wire should touch the refrigerant tubing, compressor or any moving parts.

Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner.

Connecting cable with conduit shall be routed through the hole in the conduit panel.

NOTE: Matches with Multi-Family and Residential Fan Coils require separate power for the indoor and outdoor unit. A 24V interface kit is required for compatibility. Refer to the 24V Interface Kit Installation Manual.

Airflow Data

SYSTEM SIZE	12K (115V)	6K (208/230V)	9K (208/230V)	12K (208/230V)	18K (208/230V)	24K (208/230V)	30K (208/230V)	36K (208/230V)
Outdoor (CFM)	794	1,294	1,324	1,324	1,765	2,235	2,235	2,235

Sound Pressure

SYSTEM SIZE		12K (115V)	6K (208/230V)	9K (208/230V)	12K (208/230V)	18K (208/230V)	24K (208/230V)	30K (208/230V)	36K (208/230V)
Outdoor sound pressure level	dBa	54.0	54.5	54.5	56.0	59.0	62.0	61.5	61.5

Sound Pressure in Octave Bands

	FREQUENCY (HZ)	63	125	250	500	1000	2000	4000	8000
12 K (115 V)	Cooling dB(A)	58.5	55.9	58.1	51.1	46.0	41.4	34.8	28.6
	Heating dB(A)	58.8	57.4	57.4	53.6	47.3	43.5	37.2	31.9
	Indoor dB(A)	40.8	33.0	34.3	34.1	33.7	26.6	19.4	14.1
6K (208V)	Cooling dB(A)	57.5	53.2	56.9	49.6	45.2	41.4	36.5	31
	Heating dB(A)	57.3	53.2	58.4	51.2	46.1	43.6	38.5	34.9
	Indoor dB(A)	38.1	30.9	33.6	33.5	31.7	25.9	22.6	16.7
9K (208V)	Cooling dB(A)	53.1	51.2	52.6	49.5	40.1	36.5	29.1	26.3
	Heating dB(A)	57.6	55.0	52.3	50.1	45.5	42.2	36.8	30.0
	Indoor dB(A)	45.2	38.8	38.1	40.8	38.9	35.1	24.0	14.8
12K (208V)	Cooling dB(A)	54.4	55.4	51.6	52.6	42.1	37.9	31.5	30.1
	Heating dB(A)	63.7	59.9	55.4	52.2	48.7	45.1	39.1	34.8
	Indoor dB(A)	39.5	31.0	33.3	32.5	31.5	23.9	17.9	14.4
18K (208V)	Cooling dB(A)	56.5	60.8	56.2	53.3	51.8	46.0	38.1	33.2
	Heating dB(A)	58.8	63.5	57.9	54.3	51.7	45.0	38.9	31.2
	Indoor dB(A)	39.5	41.5	41.9	41.6	43.0	37.5	33.5	21.4
24K (208V)	Cooling dB(A)	68.3	69.2	62.9	56.3	54.6	50.4	46.5	41.3
	Heating dB(A)	65.9	68.6	65.3	58.7	57.5	53.8	48.5	44.5
	Indoor dB(A)	44.3	38.8	42.9	39.4	40.5	34.5	26.2	25.6
30K (208V)	Cooling dB(A)	62.4	58.3	56.8	55.4	51.4	45.5	42.5	35.1
	Heating dB(A)	62.5	58.4	57.5	54.6	52.4	48.4	45.0	38.7
	Indoor dB(A)	47.2	38.9	45.8	42.3	42.2	37.6	28.4	23.8
36K (208V)	Cooling dB(A)	56.8	61.8	61.4	54.4	50.7	45.3	43.2	37.1
	Heating dB(A)	58.4	65.0	62.9	57.0	54.9	50.5	46.9	42.3
	Indoor dB(A)	43.5	40.6	45.6	42.2	41.9	37.3	28.6	21.5

Outdoor Unit Sound Pressure Test Conditions

NOTE: H=0.5 x Height of outdoor unit

	INDOOR CONDITION		OUTDOOR CONDITION	
	DB	WB	DB	WB
COOLING	80.6°F (27°C)	66.2°F (19°C)	95°F (35°C)	75.2°F (24°C)
HEATING	68°F (20°C)	59°F (15°C)	44.6°F (7°C)	42.8°F (6°C)

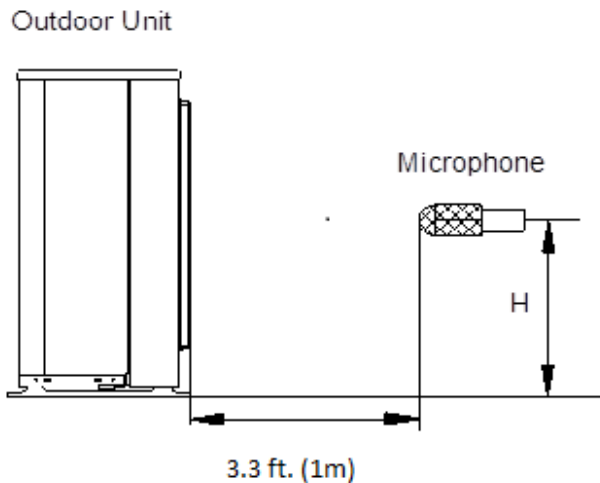


Fig. 9 — Outdoor Unit Sound Pressure Test

ELECTRICAL DATA

System Size		12K	6K	9K	12K	18K	24K	30K	36K
Power Supply	Volts-PH-Hz	115-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
	Max – Min* Oper. Voltage	127-104	253-187	253-187	253-187	253-187	253-187	253-187	253-187
	MCA	19	13	15	15	16	25	23	28
	Max Fuse/ CB AMP	25	15	15	15	25	35	30	35
Compressor	Volts-PH-Hz	115-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
	RLA	11.5	6.4	6.0	8.5	14.25	14.8	15	18

*Permissible limits of the voltage range at which the unit will operate satisfactorily.

LEGEND
FLA - Full Load Amps
MCA - Minimum Circuit Amps
RLA - Rated Load Amps

Fan and Motor Specifications

SYSTEM SIZE		12K	6K	9K	12K	18K	24K	30K	36K
		(115 V)	(208/230 V)	(208/230 V)	(208/230 V)	(208/230 V)	(208/230 V)	(208/230 V)	(208/230 V)
Material	-	Acrylonitrile Styrene +20%GF	Acrylonitrile Styrene +20%GF	Acrylonitrile Styrene +20%GF	Acrylonitrile Styrene +20%GF	Acrylonitrile Styrene +20%GF	Acrylonitrile Styrene +20%GF	Acrylonitrile Styrene +20%GF	Acrylonitrile Styrene +20%GF
Type	-	ZL-421*133*8-3KN	ZL-421*133*8-3KN	ZL-434*144*8-3KN	ZL-434*144*8-3KN	ZL-535*133*12-3KFN	ZL-560*139*12-3KN	ZL-560*139*12-3KN	ZL-560*139*12-3KN
Diameter	inch	16.58 (421)	16.58 (421)	17.09 (434)	17.09 (434)	21.06 (535)	22.05 (560)	22.05 (560)	22.05 (560)
Height	inch	5.24 (133)	5.24 (133)	5.67(144)	5.67(144)	5.24 (133)	5.47 (139)	5.47 (139)	5.47 (139)
Model	-	ZKFN-34-10-1	ZKFN-34-10-1	ZKFN-34-10-1	ZKFN-34-10-1	ZKFN-80-8-3	ZKFN-120-8-2	ZKFN-120-8-2	ZKFN-120-8-2
Volts	V	115	310	208/230	208/230	208/230	208/230	208/230	208/230
Phase		310	3	310	310	310	310	310	310
Hertz	Hz	3	60	3	3	3	3	3	3
FLA	A	0.4	0.4	0.4	0.4	0.76	0.5	0.6	0.5
Rated HP	HP	0.045	0.045	0.045	0.045	0.11	0.16	0.16	0.16
Output	W	34	34	34	34	80	120	120	120
Type	-	DC	DC	DC	DC	DC	DC	DC	DC
Insulation class	-	B	B	B	B	E	E	E	E
Safe class	-	IP24	IP24	IP24	IP24	IPX4	IPX4	IPX4	IPX4
Input	W	100.3	100.3	100.3	100.3	120	173	173	173
Range of current	Amps	0.823±10%	0.823±10%	0.823±10%	0.823±10%	1±20%	1.48±10%	1.48±10%	1.48±10%
Rated current	Amps	0.89	0.89	0.89	0.89	0.82	1.21	1.21	1.21
Capacitor	µF	NA	NA	NA	NA	NA	NA	NA	NA
Speed	rev/min	800/700/600	800/700/600	730/660/560	730/660/560	780/700/550	950/800/500	810/700/500	950/700/500
Rated RPM	rev/min	800	800	730	730	780	950	810	950
Max. input	W	100.3	100.3	100.3	100.3	120.0	170.0	170.0	170.0

CONNECTION DIAGRAMS

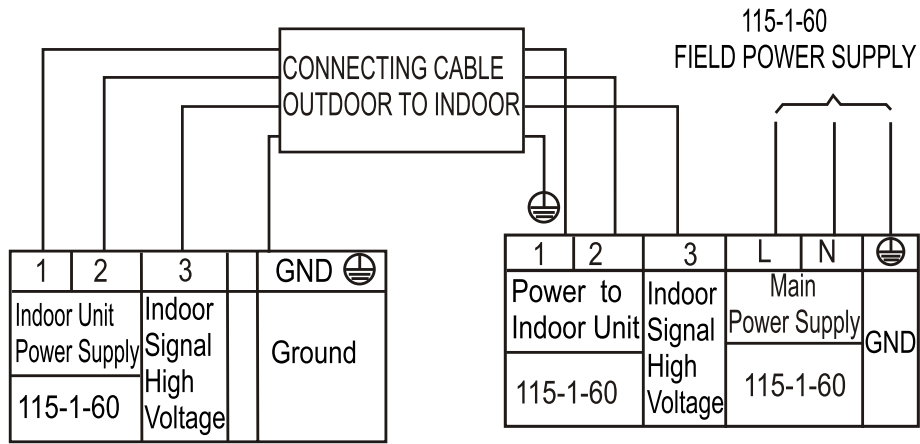


Fig. 10 — Connection Diagram 12K (115V)

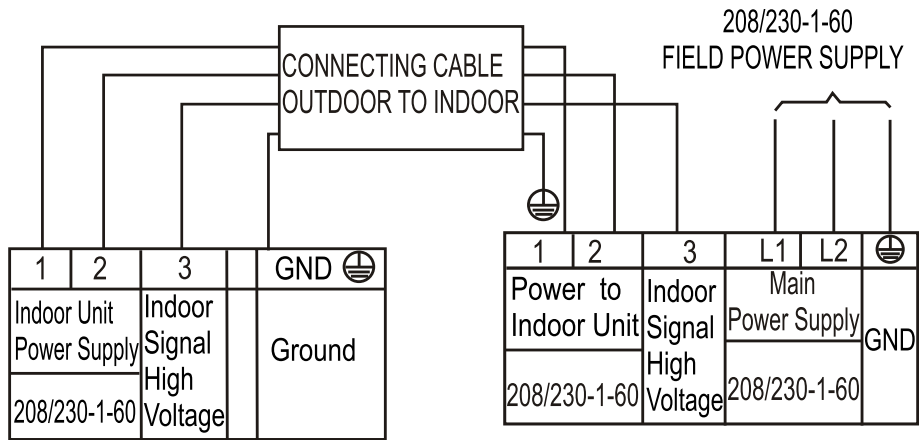


Fig. 11 — Connection Diagram 6K-36K (208/230-1-60V)

WIRING DIAGRAMS

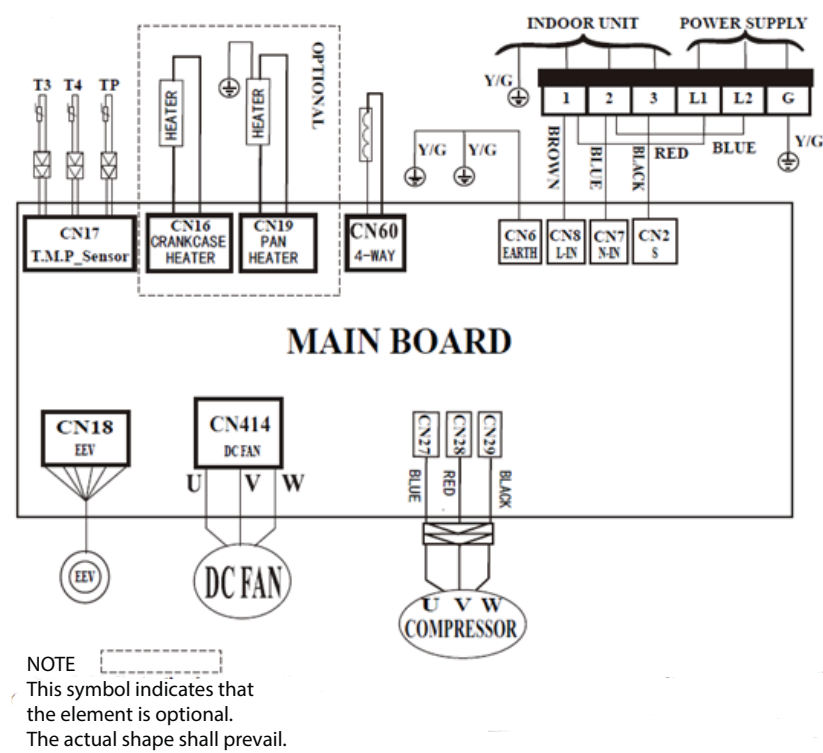
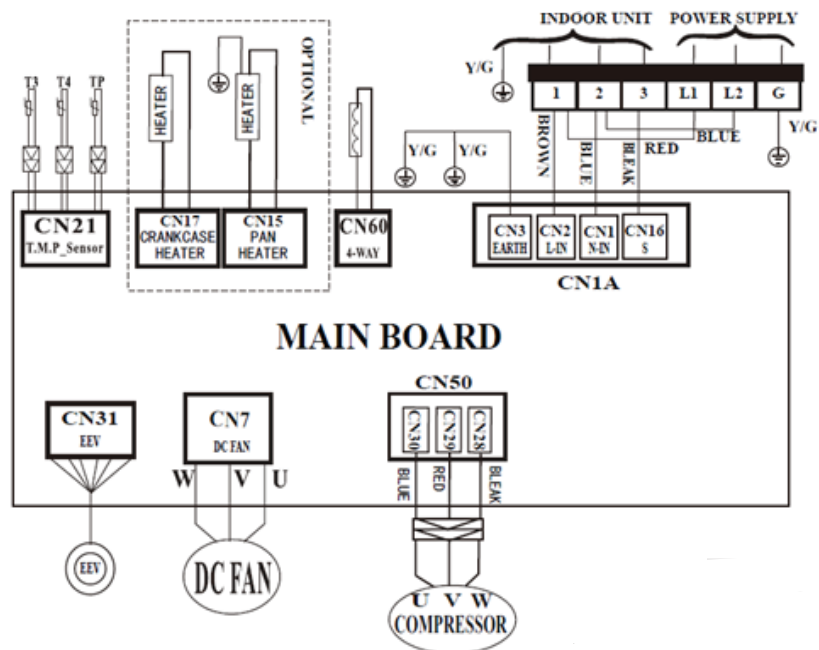


Fig. 12 — Wiring Diagram Size 12K (115V)

		CN 2/7/8	INPUT	230V	AC
		CN18	OUTPUT	0~12V	DC
		CN414	OUTPUT	0~310V	AC
		CN60	OUTPUT	230V	AC
		CN17	OUTPUT	0~5V	DC
T3	Condenser TEMP. Sensor	CN16	OUTPUT	230V	AC
T4	Ambient TEMP. Sensor	CN19	OUTPUT	230V	AvC
TP	Discharge TEMP. Sensor	CN27/28/29	OUTPUT	0~310V	AC

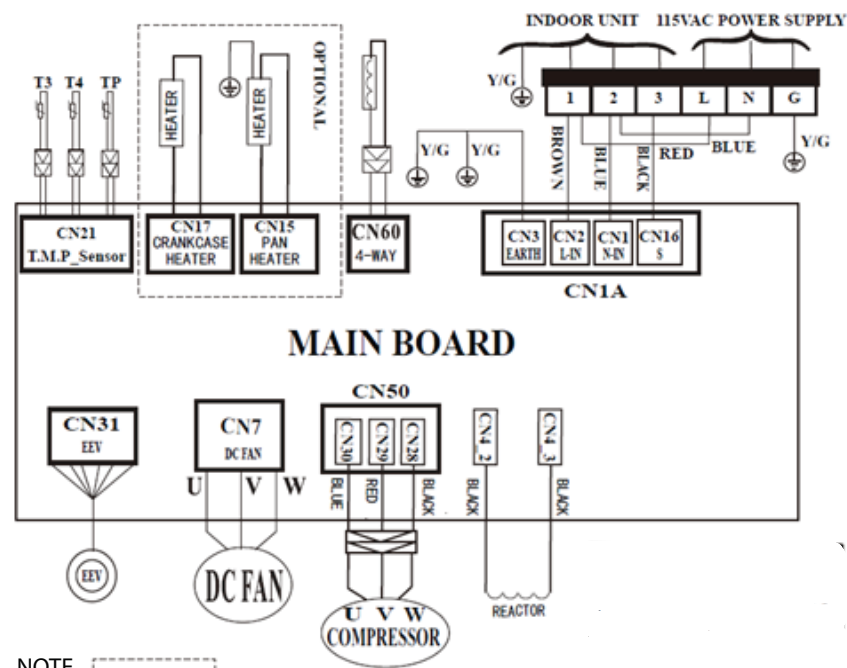


NOTE 
 This symbol indicates that
 the element is optional.
 The actual shape shall prevail.

Fig. 13 — Wiring Diagram - Sizes 6-12K (208/230V)

		CN1A	INPUT	230V	AC
		CN31	OUTPUT	0~12V	DC
		CN7	OUTPUT	0~310V	AC
		CN60	OUTPUT	230V	AC
		CN21	OUTPUT	0~5V	DC
T3	Condenser TEMP. Sensor	CN15	OUTPUT	230V	AC
T4	Ambient TEMP. Sensor	CN17	OUTPUT	230V	AC
TP	Discharge TEMP. Sensor	CN30	OUTPUT	0~310V	AC

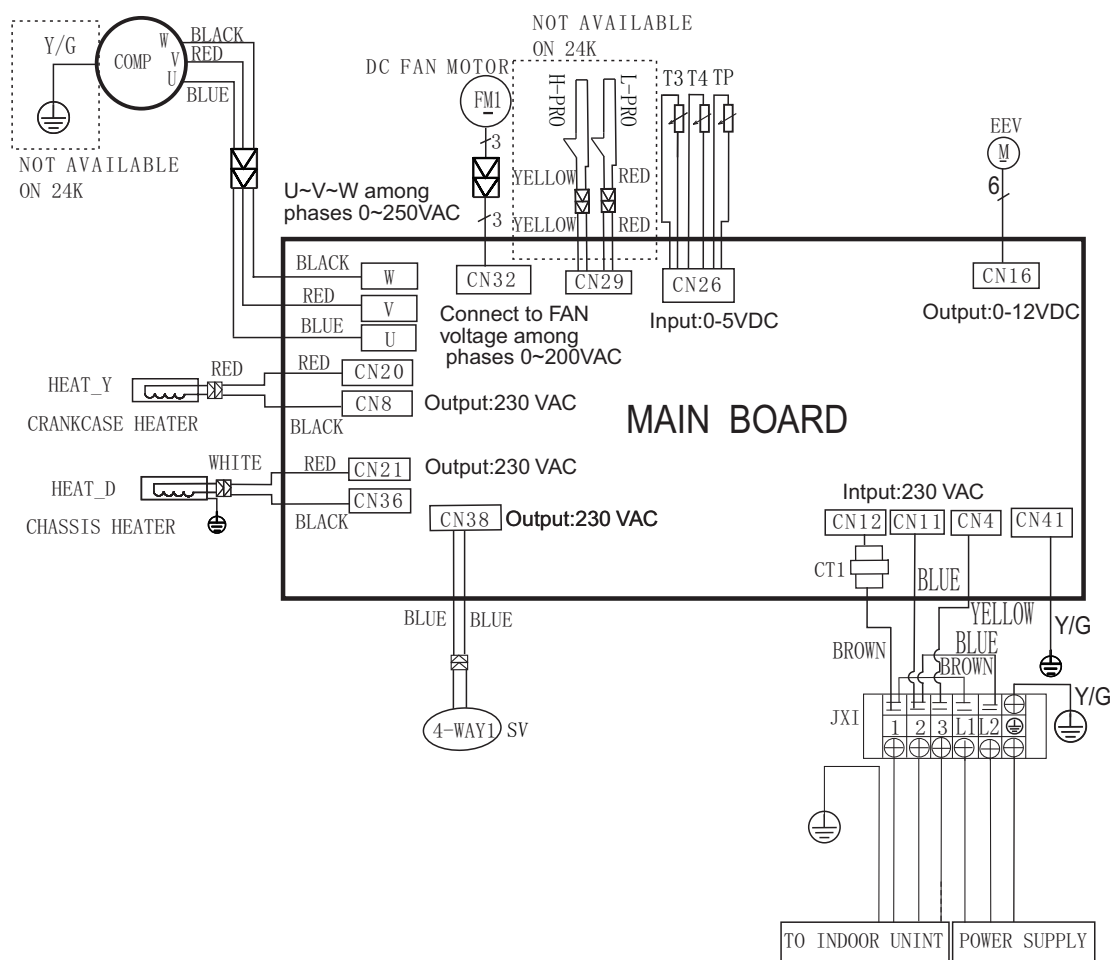
WIRING DIAGRAMS (CONTINUED)



NOTE 
This symbol indicates that the element is optional.
The actual shape shall prevail.

Fig. 14 — Wiring Diagram Size 18K (208/230V)

		CN1A	INPUT	115V	AC
		CN4_2/4_3	INPUT	115V	AC
		CN7	OUTPUT	0~310V	AC
		CN60	OUTPUT	115V	AC
		CN21	OUTPUT	0~5V	DC
T3	Condenser TEMP. Sensor	CN15	OUTPUT	115V	AC
T4	Ambient TEMP. Sensor	CN17	OUTPUT	115V	AC
TP	Discharge TEMP. Sensor	CN50	OUTPUT	0~310V	AC



Notes:
 COMPONENT IN DASH
 LINE IS OPTIONAL
 OR FIELD WIRING

Fig. 15 — Wiring Diagram Sizes 24-36K (208/230V)

CODE	PART NAME
JX1	TERMINAL BLOCK
COMP_TOP	COMP. TOP OLP TEMP. SENSOR
EEV	ELECTRIC EXPANSIVE VALVE
FM1	DC FAN MOTOR
COMP	COMPRESSOR
HEAT_Y	CRAKCASE HEATER
CT1	AC CURRENT DETECTOR
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
SV	REVERSE VALVE
TP	COMP. DISCHARGE TEMP. SENSOR
T3	COIL TEMP. SENSOR
T4	OUTDOOR AMBIENT TEMP. SENSOR
HEAT_D	CHASIS HEATER

GUIDE SPECIFICATIONS

Part 1 - GENERAL

1.01 System Description

1. Outdoor air-cooled split system compressor sections suitable for on-the-ground, rooftop, wall hung or balcony mounting. Units consist of a rotary compressor, an air-cooled coil, propeller-type draw-through outdoor fan, reversing valve (HP), accumulator (HP units), metering device(s), and a control box. Units discharge air horizontally as shown on the contract drawings. Units function as the outdoor component of an air-to-air heat pump system.
2. Units are to be used in a refrigeration circuit matched to ductless heat pump fan coil units.

1.02 Agency Listings

1. Unit construction complies with ANSI/ASHRAE 15, latest revision, and with the NEC.
2. Units are evaluated in accordance with UL standard 60335-2-40.
3. Units are listed in the CEC directory.
4. Unit cabinet is capable of withstanding 500-hour salt spray test per Federal Test Standard No. 141 (method 6061).
5. Air-cooled condenser coils are leak tested at 550 psig.

1.03 Delivery, Storage, And Handling

Units are shipped in one piece and are stored and handled per unit manufacturer's recommendations.

1.04 Warranty (For Inclusion By Specifying Engineer)

Part 2 - PRODUCTS

2.01 Equipment

A. General:

Factory assembled, single piece, air-cooled outdoor unit.
Contained within the unit enclosure is all the factory wiring, piping, controls, and the compressor.

B. Unit Cabinet:

1. Unit cabinet is constructed of galvanized steel, bonderized and coated with a baked-enamel finish on the inside and outside.
2. Unit access panels is removable with minimal screws and provides full access to the compressor, fan, and control components.
3. The outdoor compartment is isolated and has an acoustic lining to assure quiet operation.

C. Fans:

1. Outdoor fans are the direct drive propeller type, and discharges air horizontally. Fans draw air through the outdoor coil.
2. Outdoor fan motors are totally enclosed, single phase motors with class E insulation and permanently lubricated ball bearings. The motor shall be protected by internal thermal overload protection.
3. The shaft has inherent corrosion resistance.
4. Fan blades are non-metallic and statically and dynamically balanced.
5. Outdoor fan openings are equipped with a PVC metal/mesh coated protection grille over the fan.

HORIZONTAL DISCHARGE OUTDOOR UNITS

Size Range: 1/2 to 3 Ton Nominal Cooling and Heating Capacity Model Number: **38MARB**

D. Compressor:

1. Compressor is the fully hermetic rotary type.
2. Compressor is equipped with an oil system, operating oil charge, and a motor.
3. Motor is NEMA rated class E, suitable for operation in a refrigerant atmosphere.
4. Compressor assembly is installed on rubber vibration isolators.

E. Outdoor Coil:

The coil is constructed of aluminum hydrophilic pre-coated fins mechanically bonded to seamless copper tubes, which are cleaned, dehydrated, and sealed.

F. Refrigeration Components:

Refrigerant circuit components include a brass external liquid line service valve with service gage port connections, a suction line service valve with a service gage connection port, service gage port connections on compressor suction and discharge lines with Schrader type fittings with brass caps, accumulator, reversing valve.

G. Controls and Safeties:

Operating controls and safeties are factory selected, assembled, and tested. The minimum control functions include the following:

1. Controls:
 - A time delay control sequence is provided standard through the fan coil board
 - Automatic outdoor fan motor protection.
2. Safeties:
 - System diagnostics
 - Compressor motor current and temperature overload protection
 - Outdoor fan failure protection.

H. Electrical Requirements:

1. Unit operates on single-phase, 60 Hz power at 115V for unit size 12 and 208/230V for unit sizes 06, 09, 12, 18, 24, 30 and 36, as specified.
2. Unit electrical power has a single point connection.
3. Unit Control voltage to the indoor fan coil is 0-15V DC.
4. All power and control wiring must be installed per NEC and all local electrical codes.
5. The unit has high and low voltage terminal block connections.