

TEMPSTAR[®]
Heating and Cooling Products



N4H4-C

Performance Series
Product Specifications

**COASTAL 14 SEER HEAT PUMP
ENVIRONMENTALLY SOUND 14 SEER/11.5–11.7 EER/8.2 HSPF
R-410A REFRIGERANT
2 THRU 5 TONS SPLIT SYSTEM
208 / 230 Volt, 1-phase, 60 Hz**

REFRIGERATION CIRCUIT

- Scroll compressors on all models
- Suction line accumulator factory installed
- Bi-flow filter-drier included for field installation
- Integrated solid state control with Time-Temperature Defrost
- High and Low pressure switches
- Filter drier
- Copper tube / aluminum fin coil

EASY TO INSTALL AND SERVICE

- Easy Access service valves on all models
- External high and low refrigerant service ports
- Only two screws to access control panel
- Factory charged with R-410A refrigerant

BUILT TO LAST

- Baked-on powder coat finish on all sides
- Corrosion protection epoxy phenolic coated aluminum fins
- Coated, weather-resistant cabinet screws
- Coastal coated inlet grille with 3/8 (10mm) grille spacing for extra protection

WARRANTY*

- 5 year parts limited warranty (including compressor and coil)
 - With timely registration, an additional 5 year parts limited warranty (including compressor and coil)

* For residential applications only. See warranty certificate for complete details and restrictions, including warranty coverage for other applications.



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.ahridirectory.org.



Model Number	Size (tons)	Nominal Btu/hr	Min. Circuit Ampacity	Max. Fuse or Breaker	Operating Dimensions length x width x height inches (mm)	Operating/Ship Weight lbs. (kg)
N4H424CKG	2	24,000	14.7	25	31-3/16 x 31-3/16 x 38-7/8 (792 x 792 x 988)	160 / 195 (72 / 89)
N4H436CKG	3	36,000	21.5	35	31-3/16 x 31-3/16 x 32-1/16 (792 x 792 x 815)	189 / 225 (86 / 102)
N4H448CKG	4	48,000	28.0	40	31-3/16 x 31-3/16 x 35-1/2 (792 x 792 x 901)	223 / 259 (101 / 117)
N4H460CKG	5	60,000	32.5	50	31-3/16 x 31-3/16 x 38-7/8 (792 x 792 x 988)	233 / 269 (106 / 122)

OUTDOOR UNIT MODEL NUMBER IDENTIFICATION GUIDE (single phase)											
Digit Position:	1	2	3	4	5, 6	7	8	9	10	11	12
Example Part Number:	N	4	H	4	18	C	K	G	1	0	1
T = Tempstar Mainline N = Tempstar Entry BRANDING											
4 = R-410A REFRIGERANT											
A = Air Conditioner H = Heat Pump TYPE											
4 = 14 SEER NOMINAL EFFICIENCY											
24 = 24,000 BTUH = 2 tons 36 = 36,000 BTUH = 3 tons 48 = 48,000 BTUH = 4 tons 60 = 60,000 BTUH = 5 tons NOMINAL CAPACITY											
C = Coastal Unit FEATURES											
K = 208/230-1-60 VOLTAGE											
Sales Code											
Engineering Revision											
Extra Digit											
Extra Digit											

ACCESSORIES PART NUMBER IDENTIFICATION GUIDE									
Digit Position:	1	2	3	4	5	6, 7	8, 9	10, 11	
Example Part Number:	N	A	S	A	0	01	01	CH	
N = Non-Branded BRANDING									
A = Accessory PRODUCT GROUP									
S = Split System (AC & HP) KIT USAGE									
A = Original B = 2nd Generation MAJOR SERIES									
0 = Generic or Not Applicable									
2 = R-22 4 = R-410A REFRIGERANT									
Product Identifier Number									
Package Quantity									
Type of Kit(Example: CH = Crankcase Heater)									

PHYSICAL DATA

UNIT SIZE SERIES	24	36	48	60
Compressor Type	Scroll			
REFRIGERANT	R-410A			
Control	TXV (R-410A Hard Shutoff)			
Outdoor Heating Piston #	46	57	65	76
Charge lb (kg)	7.00 (3.18)	8.70 (3.95)	9.29 (4.21)	10.82 (4.91)
COND FAN	Forward Swept or Propeller Type, Direct Drive			
Air Discharge	Vertical			
Motor HP	1/5	1/4	1/4	1/4
Motor RPM	1100	1100	1100	1100
VALVE CONNECT. (In. ID)				
Vapor	5/8	3/4	7/8	7/8
Liquid	3/8			
REFRIGERANT TUBES* (In. OD)				
Rated Vapor	5/8	3/4	7/8	1-1/8
Max Liquid Line	3/8			

*Units are rated with 25 ft (7.6 m) of lineset length. See Vapor Line Sizing and Cooling Capacity Loss table when using other sizes and lengths of lineset.

Note: See unit Installation Instruction for proper installation.

VAPOR LINE SIZING AND COOLING CAPACITY LOSS

Acceptable vapor line diameters provide adequate oil return to the compressor while avoiding excessive capacity loss. The suction line diameters shown in the chart below are acceptable for HP systems with R-410A refrigerant:

Vapor Line Sizing and Cooling Capacity Losses - R-410A Refrigerant 1- Stage Heat Pump Applications

Unit Nominal Size (Btuh)	Acceptable Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%)											
		Standard Application			Long Line Application Requires Accessories								
		25 (7.62)	50 (15.2)	80 (24.4)	80+ (24.4+)	100 (30.48)	125 (38.10)	150 (45.72)	175 (53.34)	200 (60.96)	225 (68.58)	250 (76.20)	
24000 1-Stage HP	5/8	0	1	1	1	2	3	3	4	4	5	6	
	3/4	0	0	0	0	0	1	1	1	1	1	2	
36000 1-Stage HP	5/8	1	2	4	4	5	6	7	9	10	11	13	
	3/4	0	0	1	1	1	2	2	3	3	4	4	
	7/8	0	0	0	0	0	1	1	1	1	2	2	
48000 1-Stage HP	3/4	0	1	2	2	3	4	5	5	6	7	8	
	7/8	0	0	1	1	1	2	2	2	3	3	4	
60000 1-Stage R-410A HP	3/4	1	2	4	4	5	6	7	9	10	11	12	
	7/8	0	1	2	2	2	3	4	4	5	5	6	
	1 1/8	0	0	0	0	1	1	1	1	1	1	2	

Standard Length = 80 ft. (24.4 m) or less total equivalent length

Applications in this area are long line. Accessories are required as shown recommended on Long Line Application Guidelines

Applications in this area may have height restrictions that limit allowable total equivalent length, when outdoor unit is below indoor unit. See Long Line Application Guidelines

REFRIGERANT PIPING LENGTH LIMITATIONS

Maximum Line Lengths:

The maximum allowable total equivalent length for heat pumps varies depending on the vertical separation. See the tables below for allowable lengths depending on whether the outdoor unit is on the same level, above or below the outdoor unit.

Maximum Line Lengths for Heat Pump Applications

	MAXIMUM ACTUAL LENGTH ft (m)	MAXIMUM EQUIVALENT LENGTH† ft (m)	MAXIMUM VERTICAL SEPARATION ft (m)
Units on equal level	200 (61)	250 (76.2)	N/A
Outdoor unit ABOVE indoor unit	200 (61)	250 (76.2)	200 (61)
Outdoor unit BELOW indoor unit	See Table 'Maximum Total Equivalent Length: Outdoor Unit BELOW Indoor Unit'		

† Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.

Maximum Total Equivalent Length† - Outdoor Unit BELOW Indoor Unit

Size	Liquid Line Diameter w/ TXV	HP with R-410A Refrigerant - Maximum Total Equivalent Length†						
		Vertical Separation ft (m) Outdoor unit BELOW indoor unit;						
		0-20 (0 - 6.1)	21-30 (6.4 - 9.1)	31-40 (9.4 - 12.2)	41-50 (12.5 - 15.2)	51-60 (15.5 - 18.3)	61-70 (18.6 - 21.3)	71-80 (21.6 - 24.4)
24000 HP with R-410A	3/8	250*	250*	250*	250*	250*	250*	250*
36000 HP with R-410A	3/8	250*	250*	250*	250*	250*	250*	250*
48000 HP with R-410A	3/8	250*	250*	250*	250*	230	160	--
60000 HP with R-410A	3/8	250*	225*	190	150	110	--	--

* Maximum actual length not to exceed 200 ft (61 m)

† Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.

-- = outside acceptable range

LONG LINE APPLICATIONS

An application is considered Long Line when the refrigerant level in the system requires the use of accessories to maintain acceptable refrigerant management for systems reliability. Defining a system as long line depends on the liquid line diameter, actual length of the tubing, and vertical separation between the indoor and outdoor units.

For Heat Pump systems, the chart below shows when an application is considered Long Line. Beyond these lengths, long line accessories are required:

**HP WITH R-410A REFRIGERANT LONG LINE DESCRIPTION ft (m)
Beyond these lengths, long line accessories are required**

Liquid Line Size	Units On Same Level	Outdoor Below Indoor	Outdoor Above Indoor
3/8	80 (24.4)	20 (6.1) vertical or 80 (24.4) total	80 (24.4)

Note: See Long Line Guideline for details

ELECTRICAL DATA

UNIT SIZE	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MAX FUSE** or CKT BRK AMPS
		MAX	MIN	LRA	RLA	FLA		
24	208/230/1	253	197	62.9	10.9	1.10	14.7	25
36				75.0	16.1	1.40	21.5	35
48				130.0	21.3	1.40	28.0	40
60				144.2	24.9	1.40	32.5	50

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

** Time-Delay fuse.

FLA - Full Load Amps

LRA - Locked Rotor Amps

MCA - Minimum Circuit Amps

RLA - Rated Load Amps

NOTE: Control circuit is 24-V on all units and requires external power source. Copper wire must be used from service disconnect to unit.

All motors/compressors contain internal overload protection.

Complies with 2007 requirements of ASHRAE Standards 90.1

A-WEIGHTED SOUND POWER

UNIT SIZE	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
24	75	50	57	64	66	63	60	53
36	74	54	62	63	66	59	56	47
48	75	48	62	63	68	60	57	51
60	78	53	64	63	67	66	60	56

NOTE: Tested in accordance with AHRI Standard 270-08 (not listed in AHRI).

A-WEIGHTED SOUND POWER WITH SOUND HOOD

UNIT SIZE	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
24	75	51	57	64	65	63	59	53
36	74	56	62	63	66	59	56	47
48	74	49	61	62	67	59	57	49
60	76	54	63	63	66	63	57	51

NOTE: Tested in accordance with AHRI Standard 270-08 (not listed in AHRI).

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE-SERIES	REQUIRED SUBCOOLING °F (°C)
24	11 (6.1)
36	10 (5.6)
48	11 (6.1)
60	12 (6.7)

HP ONLY REPLACEMENT WITH PISTON INDOORS

When the N4H4 is used as a replacement component in a system with a piston fan coil, use the indoor piston size specified below:

UNIT SIZE	PISTON SIZE		
	FEM4P	FMA4P	FM(C,U)4P
24	0.057	0.057	0.056
36	0.070	0.072	0.069
48	0.084		
60			


= N/A

DIMENSIONS – ENGLISH

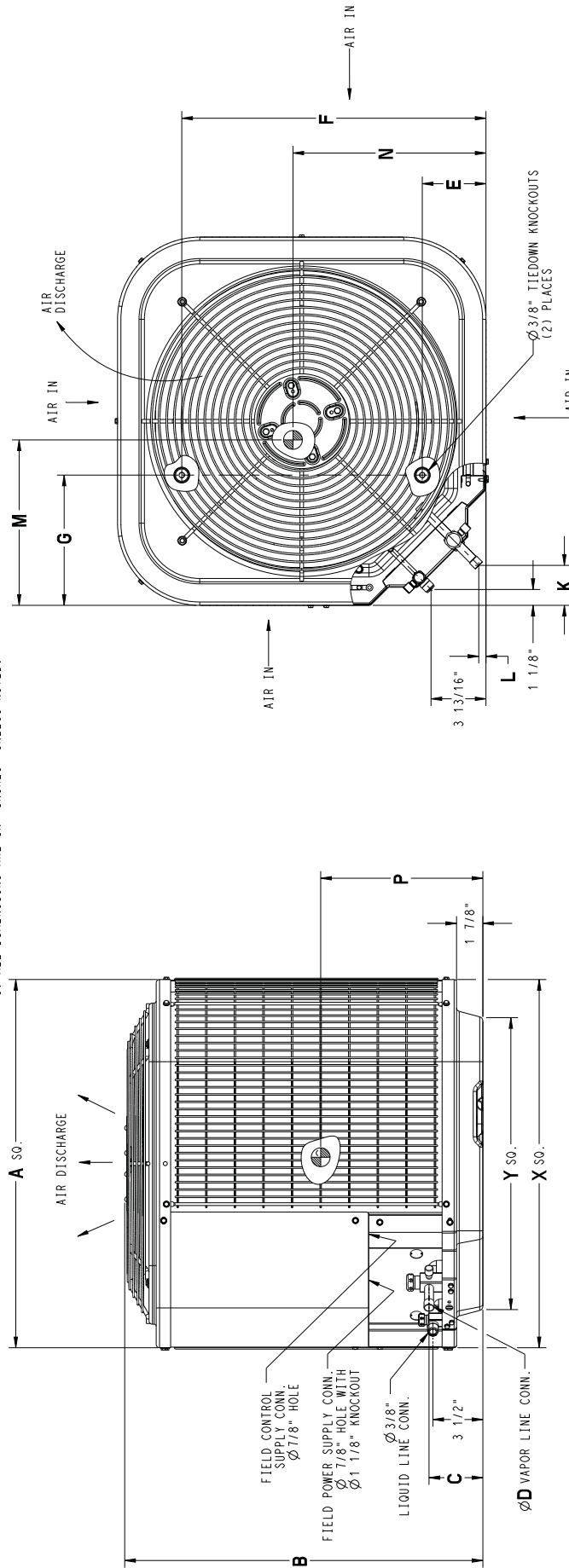
UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	K	L	M	N	P	OPERATING WEIGHT (lbs)	SHIPPING WEIGHT (lbs)	SHIPPING DIMENSIONS (L x W x H)
N4H424C	1	X 0 0 0	31 3/16"	38 7/8"	3 3/4"	5/8"	6 9/16"	24 11/16"	9 1/8"	2 13/16"	1/2"	16 1/2"	15 1/2"	17"	159.5	195	33 3/8" X 33 3/8" X 43 1/2"
N4H436C	1	X 0 0 0	31 3/16"	32 1/16"	3 3/4"	3/4"	6 9/16"	28 7/16"	9 1/8"	2 13/16"	1/2"	16 1/2"	14 1/2"	12"	189	225	33 3/8" X 33 3/8" X 36 5/8"
N4H448C	1	X 0 0 0	31 3/16"	35 1/2"	3 7/8"	7/8"	6 9/16"	28 7/16"	9 1/8"	2 15/16"	5/8"	16 1/8"	15"	15 1/2"	222.5	258.5	33 3/8" X 33 3/8" X 40"
N4H460C	1	X 0 0 0	31 3/16"	38 7/8"	3 7/8"	7/8"	6 9/16"	28 7/16"	9 1/8"	2 15/16"	5/8"	16 1/2"	14 1/2"	15 1/2"	232.5	268.5	33 3/8" X 33 3/8" X 43 1/2"

X = YES
O = NO

NOTES:

- ALLOW 30" CLEARANCE TO SERVICE SIDE OF UNIT, 48" ABOVE UNIT, 6" ON ONE SIDE, 12" ON REMAINING SIDE, AND 24" BETWEEN UNITS FOR PROPER AIRFLOW.
- MINIMUM OUTDOOR OPERATING AMBIENT IN COOLING MODE IS 55°F, MAX. 125°F.
- SERIES DESIGNATION IS THE 10TH POSITION OF THE UNIT MODEL NUMBER.
- CENTER OF GRAVITY 
- ALL DIMENSIONS ARE IN " INCHES" UNLESS NOTED.

UNIT SIZE	"X" MIN GROUND MOUNTING PAD APPLICATION DIMENSIONS	"Y" MIN ROOF-TOP MOUNTING PAD APPLICATION DIMENSIONS
-	23 1/8"	17 3/4"
-	25 3/4"	20 7/16"
24.36.48.60	31 3/16"	23"
-	35"	26 3/4"



SD5832-4 REV A


DIMENSIONS - SI

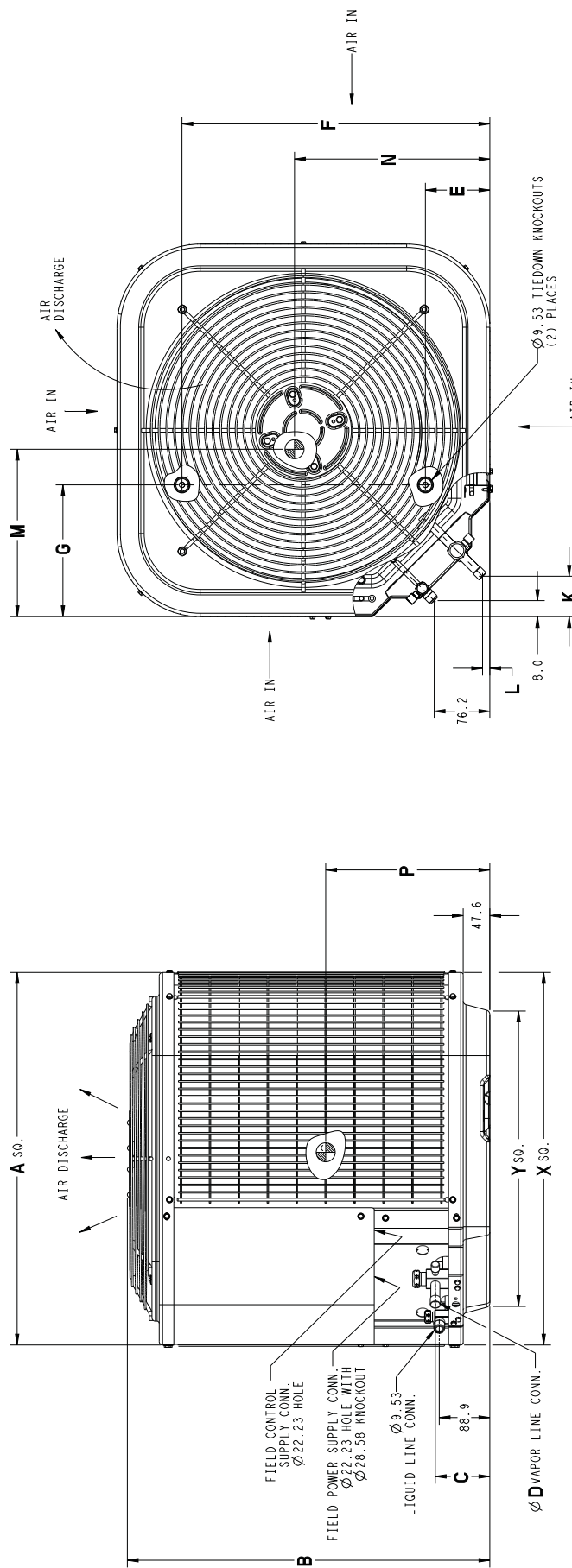
UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	K	L	M	N	P	OPERATING WEIGHT (Kgs)	SHIPPING WEIGHT (Kgs)	SHIPPING DIMENSIONS (L x W x H)
N4H424C	1	X 0 0 0	792.2	987.8	95.2	15.9	166.7	627.1	231.8	71.4	12.7	419.1	393.7	431.8	72.3	88.5	846.6 X 846.6 X 1104.9
N4H436C	1	X 0 0 0	792.2	815.0	95.2	19.0	166.7	722.3	231.8	71.4	12.7	419.1	368.3	304.8	85.7	102.1	846.6 X 846.6 X 930.3
N4H448C	1	X 0 0 0	792.2	901.4	98.4	22.2	166.7	722.3	231.8	74.6	15.9	409.6	381.0	393.7	100.9	117.3	846.6 X 846.6 X 1016.0
N4H460C	1	X 0 0 0	792.2	987.8	98.4	22.2	166.7	722.3	231.8	74.6	15.9	419.1	368.3	393.7	105.5	121.8	846.6 X 846.6 X 1104.9

X = YES
O = NO

460-3-60	208/230-3-60	230-1-60	208-230-1-60
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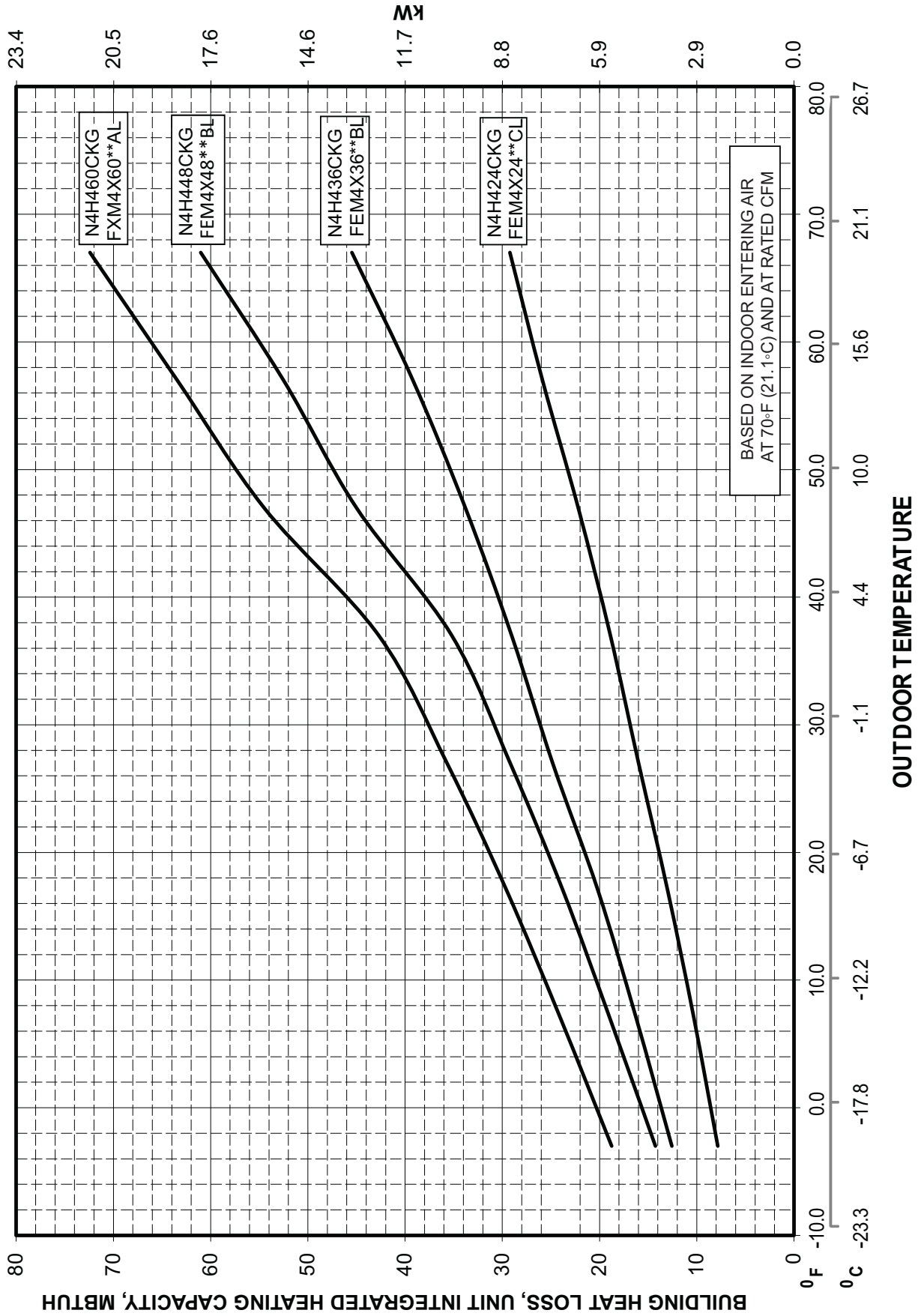
UNIT SIZE	"Y" MIN GROUND MOUNTING PAD APPLICATION DIMENSIONS	"Y" MIN ROOFTOP MOUNTING PAD APPLICATION DIMENSIONS
-	587.4	451.3
-	654.0	518.5
24-36, 48, 60	792.2	583.2
-	889.0	679.7

- NOTES:
- ALLOW 762.0 CLEARANCE TO SERVICE SIDE OF UNIT, 1219.2 ABOVE UNIT, 152.4 ON ONE SIDE, 304.8 ON REMAINING SIDE, AND 609.6 BETWEEN UNITS FOR PROPER AIRFLOW.
 - MINIMUM OUTDOOR OPERATING AMBIENT IN COOLING MODE IS 13°C, MAX. 52°C.
 - SERIES DESIGNATION IS THE 10TH POSITION OF THE UNIT MODEL NUMBER.
 - CENTER OF GRAVITY 
 - ALL DIMENSIONS ARE IN "MM" UNLESS NOTED.



SD5332-4 REV A

BALANCE POINT WORKSHEET



DETAILED COOLING CAPACITIES#

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																									
		55 (12.8)			65 (18.3)			75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)				
		Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*	Capacity MBtuh	Total Syst. KW*				
700	CFM	57 (13.9)	22.61	1.23	21.87	21.87	21.12	21.12	20.35	20.35	19.53	19.53	18.65	18.65	17.70	17.70	16.67	16.67	15.51	15.51	14.44	14.44	13.32	13.32			
		62 (16.7)	23.72	1.23	22.76	20.42	1.39	21.80	19.96	1.55	20.82	19.48	1.72	19.80	18.98	1.92	18.75	18.58	2.14	17.73	17.73	2.40	16.69	16.69			
		65 (17.2)†	24.18	1.23	23.19	16.67	1.39	22.20	16.23	1.55	21.19	15.78	1.72	20.13	15.31	1.92	19.00	14.83	2.14	17.79	14.31	2.40	16.49	13.75	2.71		
		67 (19.4)	26.10	1.23	25.06	17.34	1.39	24.01	16.90	1.54	22.93	16.46	1.72	21.79	15.99	1.91	20.58	15.51	2.14	19.30	14.99	2.40	17.90	14.44	2.71		
		72 (22.2)	28.75	1.46	27.65	14.19	1.38	26.52	13.76	1.54	25.35	13.32	1.71	24.12	12.86	1.91	22.81	12.38	2.13	21.41	11.88	2.40	19.89	11.34	2.70		
		57 (13.9)	23.63	1.25	22.84	22.84	1.40	22.03	22.03	1.57	21.21	21.21	1.74	20.37	20.37	1.93	19.40	19.40	2.16	18.40	18.40	2.42	17.29	17.29	2.73		
		62 (16.7)	24.32	1.25	23.32	21.90	1.40	22.34	21.41	1.57	21.35	20.86	1.74	20.33	19.43	1.93	19.43	19.43	2.16	18.42	18.42	2.42	17.31	17.31	2.73		
		65 (17.2)†	24.74	1.25	23.71	17.73	1.40	22.68	17.28	1.56	21.62	16.82	1.74	20.52	16.34	1.93	19.35	15.84	2.16	18.10	15.31	2.42	16.76	14.73	2.73		
		67 (19.4)	26.69	1.25	25.61	18.47	1.40	24.51	18.03	1.56	23.38	17.57	1.73	22.20	17.10	1.93	20.95	16.60	2.16	19.61	16.08	2.42	18.18	15.51	2.72		
		72 (22.2)	29.39	1.53	28.24	14.90	1.40	27.07	14.46	1.56	25.84	14.02	1.73	24.57	13.55	1.93	23.20	13.07	2.15	21.74	12.55	2.41	20.17	12.01	2.72		
900	CFM	57 (13.9)	24.48	1.27	23.65	23.65	1.42	22.80	22.80	1.58	21.93	21.93	1.76	21.01	21.01	1.95	20.03	20.03	2.18	18.97	18.97	2.44	17.81	17.81	2.74		
		62 (16.7)	24.82	1.27	23.83	23.22	1.42	22.84	22.84	1.58	21.96	21.96	1.76	21.04	21.04	1.95	20.05	20.05	2.18	18.99	18.99	2.44	17.83	17.83	2.74		
		65 (17.2)†	25.18	1.27	24.12	18.73	1.42	23.05	18.27	1.58	21.96	17.80	1.76	20.82	17.32	1.95	19.62	16.80	2.18	18.34	16.26	2.44	16.97	15.65	2.75		
		67 (19.4)	27.15	1.27	26.03	19.55	1.42	24.90	19.09	1.58	23.73	18.63	1.75	22.52	18.15	1.95	21.23	17.64	2.17	19.86	17.10	2.44	18.39	16.51	2.74		
		72 (22.2)	29.89	1.60	28.70	15.56	1.42	27.48	15.13	1.57	26.23	14.68	1.75	24.90	14.21	1.94	23.50	13.72	2.17	22.00	13.20	2.43	20.38	12.65	2.73		
		1050	CFM	57 (13.9)	34.58	1.89	33.45	33.45	2.13	32.31	32.31	2.37	31.13	31.13	2.63	29.85	29.85	2.91	28.44	28.44	3.23	26.86	26.86	3.60	25.08	25.08	4.02
				62 (16.7)	36.47	1.88	35.00	31.01	2.12	33.54	30.30	2.37	32.03	29.57	2.63	30.44	28.77	2.91	28.73	27.86	3.23	26.91	26.91	3.60	25.12	25.12	4.02
				65 (17.2)†	37.19	1.87	35.68	25.34	2.12	34.18	24.66	2.37	32.62	23.97	2.63	30.96	23.23	2.91	29.15	22.45	3.23	27.15	21.59	3.60	24.93	20.62	4.02
				67 (19.4)	40.12	1.84	38.50	26.32	2.10	36.88	25.64	2.35	35.21	24.94	2.62	33.43	24.21	2.91	31.48	23.43	3.24	29.34	22.57	3.60	26.97	21.64	4.02
				72 (22.2)	44.16	2.20	42.40	21.51	2.07	40.63	20.83	2.34	38.80	20.14	2.61	36.85	19.41	2.91	34.73	18.63	3.24	32.39	17.78	3.61	29.81	16.86	4.03
57 (13.9)	36.00			1.92	34.79	34.79	2.17	33.58	33.58	2.41	32.32	32.32	2.67	30.95	30.95	2.96	29.46	29.46	3.28	27.78	27.78	3.65	25.90	25.90	4.07		
62 (16.7)	37.33			1.91	35.80	33.13	2.16	34.29	32.36	2.41	32.75	31.54	2.67	31.14	30.83	2.96	29.50	29.50	3.28	27.82	27.82	3.65	25.93	25.93	4.07		
65 (17.2)†	38.03			1.90	36.45	26.85	2.16	34.87	26.16	2.41	33.25	25.46	2.67	31.51	24.71	2.96	29.62	23.90	3.28	27.55	23.01	3.64	25.26	22.01	4.07		
67 (19.4)	41.01			1.88	39.31	27.95	2.13	37.61	27.25	2.39	35.86	26.54	2.66	34.00	25.80	2.96	31.97	24.99	3.28	29.75	24.11	3.65	27.31	23.14	4.07		
72 (22.2)	45.13			2.32	43.27	22.52	2.10	41.42	21.82	2.38	39.50	21.12	2.66	37.47	20.38	2.96	35.26	19.58	3.29	32.84	18.72	3.66	30.17	17.79	4.07		
1350	CFM	57 (13.9)	37.21	1.95	35.93	35.93	2.20	34.65	34.65	2.45	33.31	33.31	2.71	31.88	31.88	3.00	30.30	30.30	3.32	28.54	28.54	3.69	26.57	26.57	4.11		
		62 (16.7)	38.04	1.95	36.48	35.02	2.20	34.94	34.13	2.45	33.39	33.39	2.71	31.92	31.92	3.00	30.34	30.34	3.32	28.57	28.57	3.69	26.60	26.60	4.11		
		65 (17.2)†	38.69	1.94	37.04	28.29	2.19	35.40	27.59	2.45	33.71	26.87	2.71	31.92	26.10	3.00	29.98	25.26	3.32	27.85	24.34	3.69	25.52	23.31	4.11		
		67 (19.4)	41.70	1.91	39.93	29.50	2.17	38.17	28.79	2.43	36.35	28.07	2.71	34.42	27.30	3.00	32.34	26.47	3.33	30.05	25.55	3.69	27.56	24.52	4.11		
		72 (22.2)	45.87	2.41	43.95	23.46	2.14	42.03	22.77	2.42	40.04	22.05	2.70	37.93	21.30	3.00	35.66	20.49	3.33	33.16	19.62	3.70	30.42	18.68	4.12		
		1200	CFM	57 (13.9)	34.58	1.89	33.45	33.45	2.13	32.31	32.31	2.37	31.13	31.13	2.63	29.85	29.85	2.91	28.44	28.44	3.23	26.86	26.86	3.60	25.08	25.08	4.02
				62 (16.7)	36.47	1.88	35.00	31.01	2.12	33.54	30.30	2.37	32.03	29.57	2.63	30.44	28.77	2.91	28.73	27.86	3.23	26.91	26.91	3.60	25.12	25.12	4.02
				65 (17.2)†	37.19	1.87	35.68	25.34	2.12	34.18	24.66	2.37	32.62	23.97	2.63	30.96	23.23	2.91	29.15	22.45	3.23	27.15	21.59	3.60	24.93	20.62	4.02
				67 (19.4)	40.12	1.84	38.50	26.32	2.10	36.88	25.64	2.35	35.21	24.94	2.62	33.43	24.21	2.91	31.48	23.43	3.24	29.34	22.57	3.60	26.97	21.64	4.02
				72 (22.2)	44.16	2.20	42.40	21.51	2.07	40.63	20.83	2.34	38.80	20.14	2.61	36.85	19.41	2.91	34.73	18.63	3.24	32.39	17.78	3.61	29.81	16.86	4.03
57 (13.9)	36.00			1.92	34.79	34.79	2.17	33.58	33.58	2.41	32.32	32.32	2.67	30.95	30.95	2.96	29.46	29.46	3.28	27.78	27.78	3.65	25.90	25.90	4.07		
62 (16.7)	37.33			1.91	35.80	33.13	2.16	34.29	32.36	2.41	32.75	31.54	2.67	31.14	30.83	2.96	29.50	29.50	3.28	27.82	27.82	3.65	25.93	25.93	4.07		
65 (17.2)†	38.03			1.90	36.45	26.85	2.16	34.87	26.16	2.41	33.25	25.46	2.67	31.51	24.71	2.96	29.62	23.90	3.28	27.55	23.01	3.64	25.26	22.01	4.07		
67 (19.4)	41.01			1.88	39.31	27.95	2.13	37.61	27.25	2.39	35.86	26.54	2.66	34.00	25.80	2.96	31.97	24.99	3.28	29.75	24.11	3.65	27.31	23.14	4.07		
72 (22.2)	45.13			2.32	43.27	22.52	2.10	41.42	21.82	2.38	39.50	21.12	2.66	37.47	20.38	2.96	35.26	19.58	3.29	32.84	18.72	3.66	30.17	17.79	4.07		

See notes on page 9

Specifications subject to change without notice.

DETAILED COOLING CAPACITIES# CONTINUED

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
CFM	EWB °F (°C)	75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
		Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**
		Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†
N4H448CKG Outdoor Section With FEM4X4800BL Indoor Section																			
1400	57 (13.9)	55.44	27.36	3.26	53.04	26.49	3.58	50.54	25.56	3.96	47.82	24.61	4.40	44.83	23.56	4.90	41.52	22.41	5.49
	62 (16.7)	50.43	33.65	3.23	48.27	32.78	3.93	46.00	31.87	3.93	43.54	30.90	4.37	40.81	29.84	4.88	37.78	28.66	5.46
	63 (17.2)†	46.80	32.39	3.21	44.80	31.52	3.54	42.70	30.62	3.91	40.42	29.65	4.35	37.89	28.59	4.85	35.07	27.41	5.43
	67 (19.4)	45.93	39.75	3.21	44.01	38.84	3.54	41.99	37.87	3.91	39.82	36.79	4.34	37.47	37.21	4.85	35.09	35.09	5.43
	72 (22.2)	44.23	44.23	3.20	42.70	42.70	3.53	41.09	41.09	3.90	39.31	39.31	4.34	37.31	37.31	4.85	35.05	35.05	5.43
	57 (13.9)	56.47	28.65	3.31	53.98	27.76	3.64	51.35	26.83	4.01	48.53	25.84	4.45	45.43	24.77	4.96	42.00	23.60	5.54
	62 (16.7)	51.40	35.74	3.29	49.15	34.85	3.61	46.77	33.93	3.99	44.19	32.92	4.42	41.38	31.83	4.93	38.24	30.62	5.51
1600	63 (17.2)†	47.73	34.34	3.27	45.65	33.46	3.59	43.44	32.53	3.97	41.06	31.53	4.40	38.45	30.44	4.91	35.53	29.22	5.49
	67 (19.4)	46.97	42.47	3.27	44.98	41.47	3.59	42.93	40.35	3.97	40.79	40.79	4.40	38.65	38.65	4.91	36.24	36.24	5.50
	72 (22.2)	46.00	46.00	3.26	44.36	44.36	3.59	42.64	42.64	3.96	40.73	40.73	4.40	38.61	38.61	4.91	36.20	36.20	5.50
	57 (13.9)	57.31	29.91	3.37	54.71	29.00	3.69	52.00	28.05	4.07	49.08	27.05	4.51	45.88	25.96	5.01	42.37	24.78	5.59
	62 (16.7)	52.19	37.79	3.34	49.83	36.88	3.67	47.37	35.92	4.04	44.72	34.89	4.48	41.81	33.75	4.98	38.61	32.49	5.57
1800	63 (17.2)†	48.48	36.24	3.32	46.30	35.32	3.65	44.03	34.38	4.02	41.58	33.34	4.46	38.88	32.21	4.96	35.91	30.93	5.54
	67 (19.4)	47.88	44.87	3.32	45.86	45.86	3.65	43.97	43.97	4.02	41.95	41.95	4.46	39.72	39.72	4.97	37.17	37.17	5.56
	72 (22.2)	47.48	47.48	3.32	45.75	45.75	3.65	43.92	43.92	4.02	41.91	41.91	4.46	39.67	39.67	4.97	37.13	37.13	5.55
	CONDENSER ENTERING AIR TEMPERATURES °F (°C)																		
EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
CFM	EWB °F (°C)	75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
		Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**	Capacity MBtuh		Total Syst. KW**
		Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†
N4H460CKG Outdoor Section With FEM4X6000AL Indoor Section																			
1750	57 (13.9)	68.19	34.65	3.90	65.08	33.50	4.29	61.82	32.31	4.74	58.31	31.05	5.26	54.48	29.69	5.87	50.31	28.23	6.56
	62 (16.7)	62.25	42.97	3.87	59.46	41.83	4.26	56.50	40.64	4.71	53.31	39.38	5.23	49.83	38.00	5.84	46.00	36.51	6.53
	63 (17.2)†	57.94	41.41	3.84	55.37	40.28	4.23	52.64	39.09	4.68	49.69	37.83	5.20	46.46	36.46	5.81	42.90	34.95	6.50
	67 (19.4)	56.87	51.04	3.84	54.40	49.86	4.23	51.79	48.59	4.68	49.00	47.13	5.20	46.20	46.20	5.81	43.28	43.28	6.51
	72 (22.2)	55.16	55.16	3.83	53.19	53.19	4.22	51.07	51.07	4.67	48.74	48.74	5.20	46.14	46.14	5.81	43.22	43.22	6.51
	57 (13.9)	69.34	36.34	3.98	66.11	35.18	4.36	62.71	33.97	4.81	59.05	32.68	5.34	55.10	31.31	5.94	50.78	29.82	6.63
	62 (16.7)	63.37	45.76	3.94	60.43	44.59	4.33	57.35	43.38	4.78	54.03	42.08	5.30	50.43	40.67	5.91	46.50	39.13	6.60
2000	63 (17.2)†	59.03	44.00	3.92	56.33	42.85	4.31	53.49	41.64	4.76	50.41	40.33	5.28	47.07	38.92	5.88	43.41	37.37	6.58
	67 (19.4)	58.11	54.68	3.91	55.58	53.32	4.30	53.02	53.02	4.75	50.51	50.51	5.28	47.73	47.73	5.89	44.62	44.62	6.59
	72 (22.2)	57.36	57.36	3.91	55.23	55.23	4.30	52.95	52.95	4.75	50.44	50.44	5.28	47.67	47.67	5.89	44.57	44.57	6.59
	57 (13.9)	70.20	37.95	4.05	66.85	36.77	4.44	63.34	35.54	4.88	59.59	34.25	5.41	55.52	32.85	6.01	51.10	31.36	6.70
	62 (16.7)	64.19	48.42	4.01	61.16	47.23	4.40	57.97	46.00	4.85	54.56	44.85	5.38	50.87	43.19	5.98	46.85	41.57	6.67
2250	63 (17.2)†	59.84	46.48	3.99	57.06	45.30	4.38	54.11	44.05	4.83	50.95	42.71	5.35	47.53	41.25	5.95	43.78	39.61	6.65
	67 (19.4)	59.28	59.28	3.99	56.99	56.99	4.38	54.55	54.55	4.83	51.89	51.89	5.36	48.96	48.96	5.97	45.68	45.68	6.67
	72 (22.2)	59.18	59.18	3.99	56.92	56.92	4.38	54.49	54.49	4.83	51.83	51.83	5.36	48.91	48.91	5.97	45.64	45.64	6.66

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.
 ‡ Sensible capacities shown are based on 80°F (27°C) entering air at the indoor coil. For sensible capacities at other than 80°F (27°C), deduct 835 Btuh (245 kW) per 1000 CFM (480 L/S) of indoor coil air for each degree below 80°F (27°C), or add 835 Btuh (245 kW) per 1000 CFM (480 L/S) of indoor coil air per degree above 80°F (27°C).
 # Detailed cooling capacities are based on indoor and outdoor unit at the same elevation per AHRI standard 210/240-2008. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.
 ** Sys. kw is total of indoor and outdoor unit kilowatts.
 †† At TVA rating indoor condition (75°F db/63°F ewb). All other indoor air temperatures are at 80°F db.
NOTE: When the required data falls between the published data, interpolation may be performed. Extrapolation is not an acceptable practice.
EWB — Entering Wet Bulb

HEAT PUMP HEATING PERFORMANCE

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																									
		-3 (19.4)			7 (-13.9)			17 (-8.3)			27 (-2.8)			37 (2.8)			47 (8.3)			57 (13.9)			67 (19.4)				
		Capacity MBtuh		Total Sys. KW	Capacity MBtuh		Total Sys. KW	Capacity MBtuh		Total Sys. KW	Capacity MBtuh		Total Sys. KW	Capacity MBtuh		Total Sys. KW	Capacity MBtuh		Total Sys. KW	Capacity MBtuh		Total Sys. KW	Capacity MBtuh		Total Sys. KW		
EDB °F (°C)	CFM	Total	Integ	Total	Integ	Total	Integ	Total	Integ	Total	Integ	Total	Integ	Total	Integ	Total	Integ	Total	Integ	Total	Integ	Total	Integ				
		N4H424CKG Outdoor Section With FEM4X2400CL Indoor Section																									
65 (18.3)	700	7.87	7.24	1.38	10.29	9.45	1.43	13.24	12.07	1.49	15.87	14.09	1.55	18.78	17.09	1.61	22.09	22.09	22.09	22.09	22.09	22.09	22.09	22.09	22.09	22.09	22.09
	800	8.00	7.36	1.39	10.45	9.60	1.43	13.42	12.24	1.48	16.06	14.26	1.53	19.02	17.31	1.59	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38	22.38
70 (21.1)	900	8.13	7.48	1.39	10.61	9.75	1.43	13.57	12.37	1.48	16.23	14.41	1.52	19.22	17.49	1.58	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63
	700	7.46	6.86	1.44	9.89	9.09	1.49	12.57	11.46	1.55	15.58	13.84	1.62	18.45	16.79	1.69	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71	21.71
75 (23.9)	800	7.60	7.00	1.45	10.06	9.24	1.49	12.84	11.71	1.55	15.76	14.00	1.60	18.88	17.00	1.67	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
	900	7.73	7.11	1.45	10.21	9.38	1.50	13.25	12.06	1.55	15.93	14.15	1.59	18.98	17.10	1.65	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24	22.24
75 (23.9)	700	7.04	6.48	1.50	9.49	8.72	1.56	12.14	11.07	1.62	15.29	13.58	1.70	18.13	16.50	1.77	21.34	21.34	21.34	21.34	21.34	21.34	21.34	21.34	21.34	21.34	21.34
	800	7.18	6.60	1.51	9.65	8.87	1.56	12.34	11.25	1.61	15.47	13.74	1.68	18.35	16.70	1.74	21.62	21.62	21.62	21.62	21.62	21.62	21.62	21.62	21.62	21.62	21.62
900	7.30	6.71	1.52	9.79	9.00	1.56	12.52	11.41	1.61	15.63	13.88	1.67	18.54	16.87	1.73	21.85	21.85	21.85	21.85	21.85	21.85	21.85	21.85	21.85	21.85	21.85	21.85
N4H436CKG Outdoor Section With FEM4X3600BL Indoor Section																											
65 (18.3)	1050	13.19	12.14	2.25	16.92	15.55	2.33	21.00	19.14	2.42	25.69	22.82	2.54	30.06	27.35	2.65	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06	35.06
	1200	13.45	12.37	2.28	17.22	15.82	2.35	21.35	19.47	2.43	26.02	23.11	2.53	30.47	27.73	2.63	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55	35.55
70 (21.1)	1350	13.70	12.60	2.30	17.50	16.08	2.37	21.72	19.81	2.44	26.31	23.37	2.53	30.82	28.05	2.62	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97	35.97
	1050	12.54	11.54	2.34	16.30	14.98	2.42	20.37	18.57	2.51	25.27	22.45	2.64	29.57	26.91	2.76	34.51	34.51	34.51	34.51	34.51	34.51	34.51	34.51	34.51	34.51	34.51
75 (23.9)	1200	12.82	11.79	2.36	16.62	15.27	2.44	20.73	18.90	2.52	25.59	22.73	2.63	29.97	27.28	2.74	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
	1350	13.06	12.02	2.39	16.90	15.53	2.46	21.05	19.19	2.53	25.88	22.98	2.63	30.32	27.59	2.73	35.41	35.41	35.41	35.41	35.41	35.41	35.41	35.41	35.41	35.41	35.41
75 (23.9)	1050	11.88	10.93	2.43	15.66	14.40	2.52	19.72	17.98	2.62	24.80	22.02	2.76	29.11	26.49	2.88	33.96	33.96	33.96	33.96	33.96	33.96	33.96	33.96	33.96	33.96	33.96
	1200	12.14	11.17	2.45	15.98	14.68	2.53	20.09	18.32	2.62	25.15	22.34	2.75	29.49	26.84	2.86	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44
1350	12.38	11.39	2.48	16.25	14.93	2.55	20.41	18.61	2.63	25.45	22.60	2.75	29.83	27.14	2.85	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84	34.84
N4H448CKG Outdoor Section With FEM4X4800BL Indoor Section																											
65 (18.3)	1400	18.08	16.63	0.00	22.71	20.86	0.00	26.10	25.62	0.00	33.66	29.90	0.00	39.49	35.94	0.00	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11	46.11
	1600	18.36	16.89	0.00	23.01	21.15	0.00	26.77	26.23	0.00	34.05	30.24	0.00	39.91	36.31	0.00	46.63	46.63	46.63	46.63	46.63	46.63	46.63	46.63	46.63	46.63	46.63
70 (21.1)	1800	18.61	17.12	0.00	23.29	21.40	0.00	29.05	26.49	0.00	34.29	30.45	0.00	40.26	36.64	0.00	47.05	47.05	47.05	47.05	47.05	47.05	47.05	47.05	47.05	47.05	47.05
	1400	17.53	16.13	0.00	22.18	20.39	0.00	27.37	24.95	0.00	33.31	29.58	0.00	39.00	35.49	0.00	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50
75 (23.9)	1600	17.81	16.38	0.00	22.50	20.67	0.00	27.79	25.34	0.00	33.61	29.85	0.00	39.41	35.86	0.00	46.02	46.02	46.02	46.02	46.02	46.02	46.02	46.02	46.02	46.02	46.02
	1800	18.06	16.61	0.00	22.77	20.92	0.00	28.16	25.68	0.00	33.88	30.09	0.00	39.75	36.17	0.00	46.43	46.43	46.43	46.43	46.43	46.43	46.43	46.43	46.43	46.43	46.43
75 (23.9)	1400	15.68	14.43	0.00	20.46	18.80	0.00	25.51	23.26	0.00	31.48	27.96	0.00	37.65	34.26	0.00	43.76	43.76	43.76	43.76	43.76	43.76	43.76	43.76	43.76	43.76	43.76
	1600	15.96	14.68	0.00	20.77	19.09	0.00	25.89	23.61	0.00	32.29	28.68	0.00	38.04	34.61	0.00	44.24	44.24	44.24	44.24	44.24	44.24	44.24	44.24	44.24	44.24	44.24
1800	16.21	14.91	0.00	21.05	19.34	0.00	26.20	23.89	0.00	32.65	29.00	0.00	38.33	34.88	0.00	44.64	44.64	44.64	44.64	44.64	44.64	44.64	44.64	44.64	44.64	44.64	44.64
N4H460CKG Outdoor Section With FEM4X6000AL Indoor Section																											
65 (18.3)	1750	21.55	19.83	3.60	27.25	25.05	3.73	33.41	30.46	3.88	41.11	36.51	4.08	48.27	43.93	4.27	56.22	56.22	56.22	56.22	56.22	56.22	56.22	56.22	56.22	56.22	56.22
	2000	21.89	20.14	3.63	27.63	25.39	3.75	33.84	30.85	3.88	41.56	36.91	4.07	48.79	44.39	4.24	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87
70 (21.1)	2250	22.21	20.43	3.67	27.98	25.71	3.78	34.23	31.21	3.90	41.95	37.26	4.08	49.23	44.80	4.23	57.39	57.39	57.39	57.39	57.39	57.39	57.39	57.39	57.39	57.39	57.39
	1750	20.80	19.14	3.76	26.55	24.40	3.90	32.74	29.85	4.06	39.72	35.28	4.23	47.68	43.39	4.46	55.50	55.50	55.50	55.50	55.50	55.50	55.50	55.50	55.50	55.50	55.50
75 (23.9)	2000	21.17	19.48	3.80	26.96	24.77	3.93	33.18	30.25	4.06	40.35	35.84	4.23	48.19	43.85	4.42	56.12	56.12	56.12	56.12	56.12	56.12	56.12	56.12	56.12	56.12	56.12
	2250	21.50	19.78	3.84	27.32	25.10	3.96	33.58	30.62	4.08	41.38	36.76	4.26	48.63	44.25	4.43	56.69	56.69	56.69	56.69	56.69	56.69	56.69	56.69	56.69	56.69	56.69
75 (23.9)	1750	20.01	18.41	3.93	25.82	23.72	4.08	32.01	29.19	4.24	38.87	34.52	4.42	47.11	42.87	4.67	54.80	54.80	54.80	54.80	54.80	54.80	54.80	54.80	54.80	54.80	54.80
	2000	20.37	18.74	3.97	26.22	24.10	4.10	32.47	29.60	4.25	39.41	35.01	4.41	47.61	43.32	4.64	55.41	55.41	55.41	55.41	55.41	55.41	55.41	55.41	55.41	55.41	55.41
2250	20.72	19.06	4.01	26.58	24.42	4.14	32.86	29.96	4.27	39.89	35.43	4.41	48.04	43.72	4.63	55.96	55.96	55.96	55.96	55.96	55.96	55.96	55.96	55.96	55.96	55.96	55.96

NOTE: When the required data falls between the published data, interpolation may be performed. Extrapolation is not an acceptable practice.

* The Btuh heating capacity values shown are net integrated values from which the defrost effect has been subtracted. The Btuh heating from supplement heaters should be added to those values to obtain total Sys. capacity.

† The kW values include the compressor, outdoor fan motor, and indoor blower motor. The kW from supplement heaters should be added to these values to obtain total Sys. kilowatts.

EDB — Entering Dry Bulb

TESTED AHRI COMBINATION RATINGS*

NOTE: Ratings contained in this document are subject to change at any time.

For AHRI ratings certificates, please refer to the AHRI directory. www.ahridirectory.org

Additional ratings and system combinations can be accessed via the Tempstar database:

<http://www.icpeqp.com/AHRIratings/ratings.aspx?Brand=Tempstar>

Or scan this QR code:



Model Number	Indoor Coil Model Number	Cooling Capacity	EER	SEER	High Temp		HSPF	Low Temp	
					E Capacity	E COP		H Capacity	H COP
N4H424CKG	FEM4X24**CL	22,200	11.5	14	22,200	3.74	8.2	13,100	2.46
N4H436CKG	FEM4X36**BL	34,000	11.5	14	35,000	3.62	8.2	21,200	2.44
N4H448CKG	FEM4X48**BL	45,000	11.5	14	45,500	3.50	8.2	28,800	2.56
N4H460CKG	FEM4X60**AL	57,000	11.7	14	54,500	3.70	8.2	33,000	2.56

* AHRI = Air Conditioning, Heating & Refrigeration Institute

* Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included. Ratings are based on:

Cooling Standard: 80°F (27°C) db indoor entering air temperature and 95°F (35°C) db air entering outdoor unit.

High-Temp Heating Standard: 70°F (21°C) db indoor entering air temperature and 47°F (8°C) db 43°F (6°C) wb air entering outdoor unit.

Low-Temp Heating Standard: 70°F (21°C) db indoor entering air temperature and 17°F (-8°C) db 15°F (-9°C) wb air entering outdoor unit.

COP — Coefficient of Performance

EER — Energy Efficiency Ratio

HSPF — Heating Seasonal Performance Factor

SEER — Seasonal Energy Efficiency Ratio

GUIDE SPECIFICATIONS

AIR-COOLED, SPLIT-SYSTEM HEAT PUMP

GENERAL

N4H4CKG**

1-1/2 TO 5 NOMINAL TONS

System Description

Outdoor-mounted, air-cooled, split-system heat pump unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, an air-cooled coil, propeller-type condenser fan, and a control box. Unit will discharge supply air upward as shown on contract drawings. Unit will be used in a refrigeration circuit to match up to a packaged fan coil or coil unit.

Quality Assurance

- Unit will be rated in accordance with the latest edition of AHRI Standard 240.
- Unit will be certified for capacity and efficiency, and listed in the latest AHRI directory.
- Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC.

- Unit will be constructed in accordance with UL standards and will carry the UL label of approval. Unit will have C-UL approval.
- Unit cabinet will be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 500-hr salt spray test.
- Air-cooled condenser coils are pressure tested and the outdoor unit is leak tested.
- Unit constructed in ISO9001 approved facility.

Delivery, Storage, and Handling

- Unit will be shipped as single package only and is stored and handled per unit manufacturer’s recommendations.

Warranty (for inclusion by specifying engineer)

- U.S. and Canada only.

PRODUCTS

Equipment

- Factory assembled, single piece, air-cooled heat pump unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge R-410A, and special features required prior to field start-up.

Unit Cabinet

- Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint.
- Available with dense grille only.

Fans

- Condenser fan will be direct-drive propeller type, discharging air upward.
- Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings.
- Shafts will be corrosion resistant.
- Fan blades will be statically and dynamically balanced.
- Condenser fan openings will be equipped with steel wire safety guards.

Compressor

- Compressor will be hermetically sealed.
- Compressor will be mounted on rubber vibration isolators.

Condenser Coil

- Condenser coil will be air cooled.
- Coil will be constructed of aluminum fins mechanically bonded to copper tubes which are then cleaned, dehydrated, and sealed.
- ArmorPlate coating – Aluminum fin material is pre-coated on both sides with a corrosion protective epoxy phenolic coating.

Refrigeration Components

- Refrigeration circuit components will include liquid-line shutoff valve with sweat connections, vapor-line shutoff valve with sweat connections, system charge of R-410A refrigerant, POE compressor oil, accumulator, and reversing valve.

Operating Characteristics

- The capacity of the unit will meet or exceed ____ Btuh at a suction temperature of ____ °F/°C. The power consumption at full load will not exceed ____ kW.
- Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of ____ Btuh or greater at conditions of ____ CFM entering air temperature at the

evaporator at _____ °F wet bulb and _____ °F/°C dry bulb, and air entering the unit at _____ °F/°C.

- The system will have a SEER of _____ Btuh/watt or greater at DOE conditions.

Electrical Requirements

- Nominal unit electrical characteristics will be _____ v, single phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.

- Unit electrical power will be single point connection.
- Control circuit will be 24v.

Special Features

- Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.

SYSTEM DESIGN SUMMARY

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wc.
2. Minimum outdoor operating air temperature without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature for cooling mode is 125°F (51.7°C).
4. Minimum outdoor operating air temperature for heating mode is -30°F (-34.4°C).
5. Maximum outdoor operating air temperature for heating mode is 66°F (18.9°C).
6. For reliable operation, unit should be level in all horizontal planes.
7. For interconnecting refrigerant tube lengths greater than 80 ft (23.4 m) and/or elevation differences between indoor and

outdoor units greater than 20 ft (6.1 m), consult Residential Piping and Longline Guideline and Service Manual available from equipment distributor.

8. If any refrigerant tubing is buried, provide a 6 in. (152.4 mm) vertical rise to the valve connections at the unit. Refrigerant tubing lengths up to 36 in. (914.4 mm) may be buried without further consideration. Do not bury refrigerant lines longer than 36 in. (914.4 mm).
9. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
10. Do not apply capillary tube indoor coils to these units.
11. Factory-supplied filter drier must be installed.

**Accessory Description and Usage
(Listed Alphabetically)**

1. Ball-Bearing Fan Motor

A fan motor with ball bearings which permits speed reduction while maintaining bearing lubrication.

Usage Guideline:

Required on all units when using MotorMaster®

2. Compressor Start Assist – Capacitor and Relay

Start capacitor and relay gives a hard boost to compressor motor at each start up.

Usage Guideline:

Required for reciprocating compressors in the following applications:

- Long line
- Low ambient cooling
- Hard shut off expansion valve on indoor coil
- Liquid line solenoid on indoor coil

Required for single-phase scroll compressors in the following applications:

- Long line
- Low ambient cooling

Suggested for all compressors in areas with a history of low voltage problems.

3. Compressor Start Assist — PTC Type

Solid state electrical device which gives a soft boost to the compressor at each start-up.

Usage Guideline:

Suggested in installations with marginal power supply.

4. Crankcase Heater

An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes the chance of liquid slugging.

Usage Guideline:

- Required in low ambient cooling applications.
- Required in long line applications.
- Suggested in all commercial applications.

5. Evaporator Freeze Thermostat

An SPST temperature-actuated switch that stops unit operation when evaporator reaches freeze-up conditions.

Usage Guideline:

Required when low ambient kit has been added.

6. Isolation Relay

An SPDT relay which switches the low-ambient controller out of the outdoor fan motor circuit when the heat pump switches to heating mode.

Usage Guideline:

Required in all heat pumps where low ambient kit has been added.

7. Liquid-Line Solenoid Valve (LLS)

An electrically operated shutoff valve which stops and starts refrigerant liquid flow in response to compressor operation. It is to be installed at the outdoor unit to control refrigerant off cycle migration in the heating mode.

Usage Guideline:

An LLS is required in all long line heat pump applications to control refrigerant off cycle migration in the heating mode. See Long Line Guideline.

8. Low-Ambient Pressure Switch Kit

A long life pressure switch which is mounted to outdoor unit service valve. It is designed to cycle the outdoor fan motor in order to maintain head pressure within normal operating limits. The control will maintain working head pressure at low-ambient temperatures down to 0°F (-18°C) when properly installed.

Usage Guideline:

A Low-Ambient Pressure Switch or MotorMaster® Low-Ambient Controller must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

9. Outdoor Air Temperature Sensor

This device enables the thermostat to display the outdoor temperature. This device also is required to enable special thermostat features such as auxiliary heat lock out or fossil fuel applications.

Usage Guideline:

Suggested for all outdoor air temperature sensor supporting thermostats.

10. Sound Jacket

Wraparound sound reducing cover for the compressor. Reduces the sound level by about 2 dBA.

Usage Guideline:

Suggested when unit is installed closer than 15 ft. (4.577 m) to quiet areas, bedrooms, etc.

Suggested when unit is installed between two houses less than 10 ft. (3.05 m) apart.

11. Thermostatic Expansion Valve (TXV) Bi-Flow

A modulating flow-control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator.

Usage Guideline:

Accessory required to meet AHRI rating and system reliability, where indoor not equipped.

Required in all heat pump applications designed with R-410A refrigerant.

ACCESSORY USAGE GUIDELINE

Accessory	REQUIRED FOR LOW-AMBIENT COOLING APPLICATIONS (Below 55°F / 12.8°C)	REQUIRED FOR LONG LINE APPLICATIONS*	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles / 3.22 km)
Accumulator	Standard	Standard	Standard
Ball Bearing Fan Motor	Yes	No	No
Compressor Start Assist Capacitor and Relay	Yes	Yes	No
Crankcase Heater	Yes	Yes	No
Evaporator Freeze Thermostat	Yes	No	No
Hard Shutoff TXV	Yes	Yes	No
Isolation Relay	Yes	No	No
Liquid Line Solenoid Valve	No	See Long-Line Application Guideline	No
Motor Master® Control or Low Ambient Switch	Yes	No	No
Support Feet	Recommended	No	Recommended

* For tubing line sets between 80 and 200 ft. (24.38 and 60.96 m) and/or 20 ft. (6.09 m) vertical differential, refer to Residential Split-System Longline Application Guideline.

ACCESSORIES

Part Number	Description	Used On Model Size
NASA001SC	Start Component - PTC Device	ALL
NASA00201FS	Evaporator Freeze Thermostat	ALL
NASA001LS	Liquid Line Solenoid Valve	ALL
NASA001TD	Time Delay Relay, Indoor Blower	ALL
NASA001AC	Anti-Cycle Timer (5 minute delay)	ALL
NASA401LA	Low Ambient Kit (Pressure Switch)	ALL
NASA00101IK	Low Ambient Isolation Relay Kit	ALL
NASA00201SF	Support Feet, 4" (102mm) tall	ALL
NASA003SC	Hard Start Kit (Capacitor & Relay)	ALL
NASA003CH	Crankcase Heater for Compressor	24, 36
NASA001CH	Crankcase Heater for Compressor	48, 60
NASA002SJ	Sound Jacket, Compressor	24
NASA001SJ	Sound Jacket, Compressor	36, 48
NASA003SJ	Sound Jacket, Compressor	60
EBAC05TXVX	TXV Kit, R-410A - 2005-2009 R-22 TXV Fancoils (air handlers)	24
EBAC06TXVX	TXV Kit, R-410A - 2005-2009 R-22 TXV Fancoils (air handlers)	36
EBAC07TXVX	TXV Kit, R-410A - 2005-2009 R-22 TXV Fancoils (air handlers)	48, 60