

**38CKD (60 Hz)
13 SEER Air Conditioner
Export Model
Sizes 018 – 060**



Product Data

FEATURES AND BENEFITS

AVAILABLE SIZES:

Nominal sizes are available from 018 through 060 to meet the needs of residential and light commercial applications.

CERTIFICATION:

All models are listed with UL and NOM.

ELECTRICAL RANGE:

Units offered in single phase 208/230v are 018-060 and three phase 208/230v in 036, 048 and 060.

FAN MOTOR:

The totally enclosed fan motor provides greater reliability under adverse conditions and dependable performance for many years. The permanent split capacitor type motor was designed for optimum efficiency. The motor was then qualified under extreme conditions to help ensure a long, reliable life.

CABINET:

A weather protective cabinet of prepainted steel is protected underneath by a galvanized coating and treated with a layer of zinc phosphate for a finish that will last for many years. All screws on cabinet exterior are coated for a long-lasting, rust-resistant, quality appearance.

UNIT DESIGN:

The copper tube, enhanced sine wave, aluminum fin coil is designed for optimum heat transfer. Vertical air discharge carries sound and hot condenser air up and away from adjacent patio areas and foliage. The base pan is designed for easy removal of water, dirt, and leaves.

COMPRESSOR:

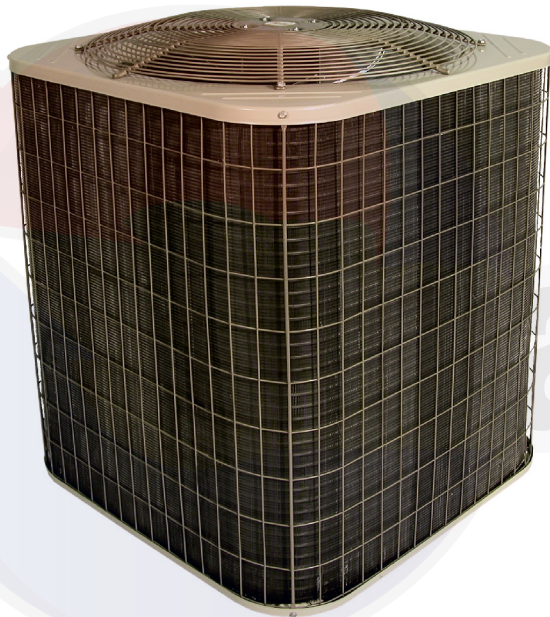
Each compressor is protected with internal temperature- and current-sensitive overloads. An internal pressure relief valve provides high pressure protection to the refrigerant system. For improved serviceability, all models are equipped with a compressor terminal plug.

SERVICE VALVES:

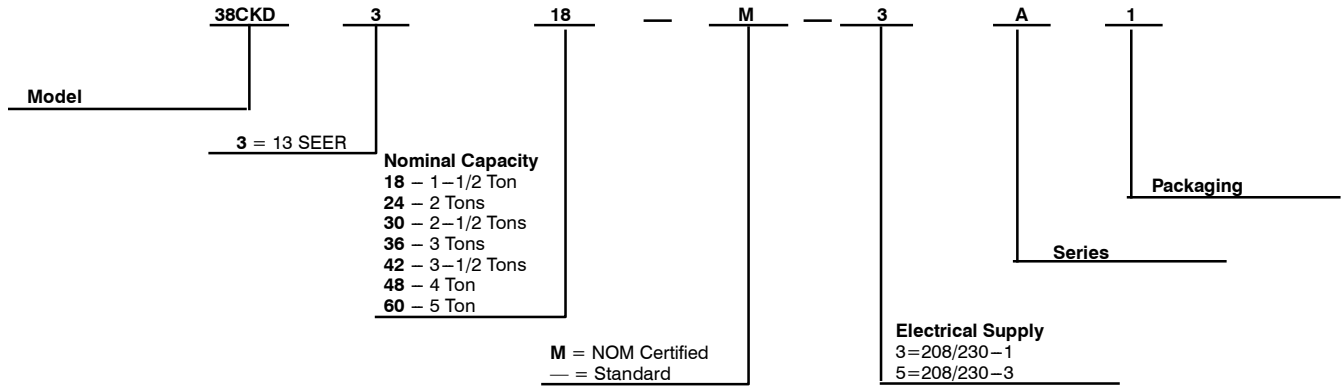
Both service valves are brass, front seating type with sweat connections. Valves are externally located so refrigerant tube connections can be made quickly and easily. Each valve has a service port for ease of checking operating refrigerant pressures.

SERVICEABILITY:

One access panel provides access to electrical controls. Removal of top gives access to fan motor, compressor, and condenser coil.



PRODUCT NUMBER NOMENCLATURE



38CKD

ISO 9001:2000



SPECIFICATIONS

UNIT SIZE SERIES	318 B	324 B	330 B	336 B	342 B	348 B	360 B
ELECTRICAL							
Unit Volts—Hertz—Phase	208/230—60—1						
Operating Voltage Range*	187—253						
Compressor—Rated Load Amps	8.3	10.8	13.5	15.4	19.2	20.2	25.3
Locked Rotor Amps	40.3	56.3	68.3	87.0	112.0	137.0	146.0
Condenser Fan Motor— Full Load Amps	0.5	.05	0.8	1.1	1.4	1.4	1.4
Min Unit Ampacity for Wire Sizing	10.9	14.0	17.7	20.4	25.4	26.7	33.0
Min Wire Size (60°/75° Copper) AWG**	14	14	14	12	10	10	8
Max Wire Length (60°/75°) ft. (m)†	72 / 68	56/54	44 / 42	60 / 57	77 / 73	74 / 70	94 / 90
Max Branch Circuit Fuse Size‡	(23.2 / 20.7)	(17.1 / 16.5)	(13.4 / 12.8)	(18.3 / 17.4)	(23.5 / 22.3)	(22.6 / 21.3)	(28.7 / 27.4)
	15	20	30	30	40	40	50
							30
COMPRESSOR AND REFRIGERANT							
Compressor—Manufacturer	Copeland						
Type	Scroll						
Temperature and Current Protection	Internal Line Break						
R—22 Refrigerant— Amount Lb (kg) @ 15 ft (4.6 m)	R—22 3.56 (1.62)	R—22 4.08 (1.85)	R—22 4.11 (1.87)	R—22 5.35 (2.43)	R—22 7.01 (3.18)	R—22 8.88 (4.04)	R—22 10.52 (4.79)
Refrigerant Tubes (In. OD)	3/4 and 3/8						
‡‡ Rated Vapor and Liquid							
CONDENSER COIL AND FAN							
Coil Face Area (Sq Ft)	8.4	9.8	9.8	12.98	17.3	23.79	19.47
Fan Motor—HP, Type, and RPM	1/12 PSC and 1100						
Volts—Hertz—Phase	208/230—60—1						
Condenser Airflow (CFM)	1700	1700	2000	3100	3400	3400	3400
OPTIONAL EQUIPMENT							
Cycle Protector	KSACY0101AAA						
Start Assist—PTC Type	KAACS0201PTC						
Start Assist—Capacitor/Relay Type	N/A						
Motor/Master® Control	KSAHS1501AAA						
Ball Bearing Fan Motor (RCD)	HC32GE234	HC34GE239	HC38GE219	HC38GE219	HC40GE226	HC40GE226	HC40GE226
Low—Pressure Switch	KAALP0101LPS						
High—Pressure Switch	KSAH10101HPS						
Compressor Sound Hood	KSASH1801COP						
Time—Delay Relay	KAATD0101TDR						
Low—Ambient Pressure Switch Kit	KSALA0201R22						
Winter Start Control	KAAWS0101AAA						
Evaporator Freeze Thermostat	KAAF0101AAA						
Compressor Crankcase Heater	KAAACH1401AAA						
Liquid Line Solenoid Valve††	KAAALS0101LLS						
TXV (Hard Shutoff)††	KSATX0601H50						
Standard Thermostat, Manual Change-over, Non—Programmable, °F/°C, 1—Stage Heat, 1—Stage Cool	TB—NAC01						
Thermostat, Auto Changeover, 7—Day Programmable, °F/°C, 1—Stage Heat, 1—Stage Cool	TB—PAC01						
Outdoor Sensor	TSTATCCSEN01—B						
Liquid Line Filter Drier	KH43LZ036						
Backplate for Standard Thermostat	TSTATXBBP01						
Backplate for Programmable Thermostat	TSTATXPBP01						

N/A—Not applicable in this application.

* Permissible limits of the voltage range at which unit will operate satisfactorily. Operation outside these limits may result in unit failure.

† Time—delay fuse or circuit breaker.

‡ Length shown is as measured 1 way along wire path between unit and service panel for voltage drop not to exceed 2%. ** If wire is applied at ambient greater than 30° C, consult Table 310—16 of the NEC (NFPA 70). The ampacity of nonmetallic—sheathed cable (NM), trade name ROMEX, shall be that of 60° C conductors, per the NEC (NFPA 70) Article 336—26.

†† Do not use hard shutoff TXV with liquid solenoid valve.

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

Requires ball—bearing fan motor.

NOTES:

- Control circuit is 24v on all units and requires external power source.
- All motors/compressors contain internal overload protection.
- Copper wire must be used from service disconnect to unit.

DIMENSIONS - ENGLISH

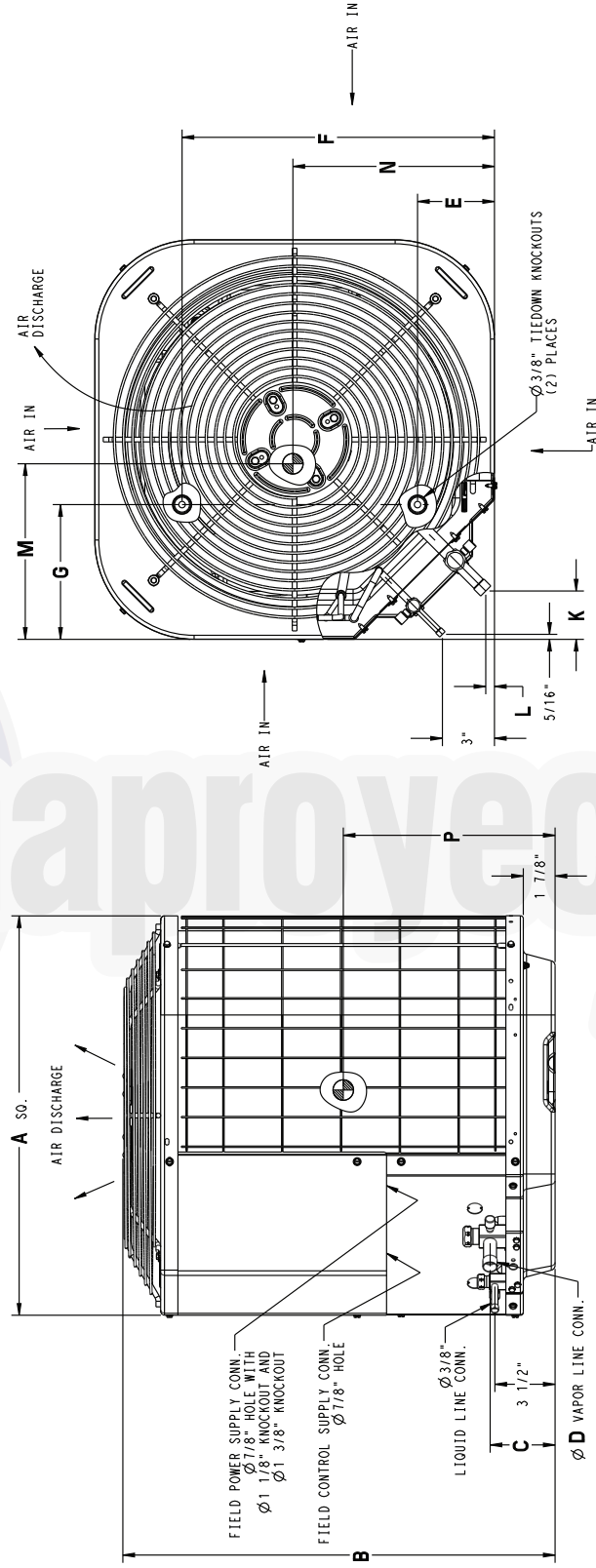
UNIT	SERIES	ELECTRICAL CHARACTERISTICS	A	B	C	D	E	F	G	K	L	M	N	P	OPERATING WEIGHT (LBS)	SHIPPING WEIGHT (LBS)	SHIPPING DIMENSIONS (L x W x H)
38CKD318-M	B	X 0 0	23 1/8"	24 13/16"	3 3/4"	3/4"	4 7/16"	18 11/16"	7 13/16"	2 13/16"	1/2"	12"	11 3/4"	11 7/8"	105.0	120.0	24 1/8" X 24 1/8" X 27 3/16"
38CKD324-M	B	X 0 0	23 1/8"	28 7/16"	3 3/4"	3/4"	4 7/16"	18 1/16"	7 13/16"	2 13/16"	1/2"	12"	11 3/4"	12 1/2"	108.5	123.0	24 1/8" X 24 1/8" X 30 5/8"
38CKD330-M	B	X 0 0	23 1/8"	28 7/16"	3 3/4"	3/4"	4 7/16"	18 1/16"	7 13/16"	2 13/16"	1/2"	12"	11 3/4"	12 7/8"	112.5	126.5	24 1/8" X 24 1/8" X 30 5/8"
38CKD336-M	B	X 0 X	31 3/16"	24 13/16"	3 7/8"	7/8"	6 9/16"	24 11/16"	9 1/8"	2 15/16"	5/8"	16"	15 1/2"	11 5/8"	135.0	157.0	32 3/16" X 32 3/16" X 27 3/16"
38CKD342-M	B	X 0 0	31 3/16"	31 13/16"	3 7/8"	7/8"	6 9/16"	24 11/16"	9 1/8"	2 15/16"	5/8"	16"	15 1/2"	13 3/4"	164.5	188.0	32 3/16" X 32 3/16" X 34"
38CKD348-M	B	X 0 X	31 3/16"	42"	3 7/8"	7/8"	6 9/16"	24 11/16"	9 1/8"	2 15/16"	5/8"	16"	15 1/2"	17"	174.0	208.0	32 3/16" X 32 3/16" X 44 1/4"
38CKD360-M	B	X 0 X	31 3/16"	35 3/16"	3 7/8"	7/8"	6 9/16"	24 11/16"	9 1/8"	2 15/16"	5/8"	16"	15 1/2"	15 1/4"	208.0	233.0	32 3/16" X 32 3/16" X 37 7/16"

208-230-160	230-160	208/230-3-60	460-3-60
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X = YES
O = NO

NOTES:

1. 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.
2. MINIMUM OUTDOOR OPERATING AMBIENT IN COOLING
MODE IS 55°F., MAX. 125°F.
3. SERIES DESIGNATION IS THE 13TH POSITION OF THE
UNIT MODEL NUMBER.
4. CENTER OF GRAVITY
5. ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.



UNIT SIZE	MINIMUM MOUNTING PAD DIMENSIONS
18, 24, 30	23 1/2" X 23 1/2"
36	26" X 26"
36, 42, 48, 60	31 1/2" X 31 1/2"
...	35" X 35"

OPTIONAL EQUIPMENT USAGE GUIDELINE

ACCESSORY	REQUIRED FOR LOW AMBIENT COOLING APPLICATIONS (Below 55°F / 22.8°C)	REQUIRED FOR LONG LINE APPLICATIONS* (Over 80 Ft./24.4 m)	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles/3.2 km)
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 Shut-Off TXV	Yes	Yes	Yes
Liquid Line Solenoid Valve	No	See Long-Line Application Guideline	No
Low Ambient Kit (Pressure Switch)	Yes	No	No
Support Feet	Recommended	No	Recommended
Winter Start Control	Yes	No	No

* 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.

† Required for Low-Ambient Controller (full modulation feature) MotorMaster® Control.

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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 MotorMaster® is used.

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. Cycle Protector

The cycle protector is designed to prevent compressor short cycling. This control provides an approximate 5-minute delay after power to the compressor has been interrupted for any reason, including power outage, protector control trip, thermostat jiggling, or normal cycling.

6. 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.

7. 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 (approximately 100 psig/689.5 KpA to 225 psig/1551.3 KpA). 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).

8. MotorMaster® Low-Ambient Controller

A fan-speed control device activated by a temperature sensor, designed to control condenser fan motor speed in response to the saturated, condensing temperature during operation in cooling mode only. For outdoor temperatures down to -20°F (-28.9°C), it maintains condensing temperature at 100°F ±10°F (37.8°C ± 5.5°C).

Usage Guideline:

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

Suggested for all commercial applications.

9. Outdoor Air Temperature Sensor

Designed for use with Carrier Thermostats listed in this publication. 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.

Usage Guideline:

Suggested for all Carrier thermostats listed in this publication.

Accessory Description and Usage (Listed Alphabetically) (Continued)

10. Sound Hood

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 (4.57 m) to quiet areas, bedrooms, etc.

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

11. Support Feet

Four stick-on plastic feet that raise the unit 4 in. (101.6 mm) above the mounting pad. This allows sand, dirt, and other debris to be flushed from the unit base, minimizing corrosion.

Usage Guideline:

Suggested in the following applications:

Coastal installations.

Windy areas or where debris is normally circulating.

Rooftop installations.

For improved sound ratings.

12. Thermostatic Expansion Valve (TXV)

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.

Kit includes valve, adapter tubes, and external equalizer tube. Hard shut off types are available.

NOTE: When using a hard shut off TXV with single phase reciprocating compressors, a Compressor Start Assist Capacitor and Relay is required.

Usage Guideline:

Required to achieve ARI ratings in certain equipment combinations. Refer to combination ratings.

Hard shut off TXV or LLS required in air conditioner long line applications.

Required for use on all zoning systems.

13. Time-Delay Relay

An SPST delay relay which briefly continues operation of indoor blower motor to provide additional cooling after the compressor cycles off.

NOTE: Most indoor unit controls include this feature. For those that do not, use the guideline below.

Usage Guideline:

For improved efficiency ratings for certain combinations of indoor and outdoor units. Refer to ARI Unitary Directory.

14. Winter Start Control

This control is designed to alleviate nuisance opening of the low-pressure switch by bypassing it for the first 3 minutes of operation.

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A-WEIGHTED SOUND POWER LEVEL

Unit Size	Standard	TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment)						
	Rating (dBA)	125	250	500	1000	2000	4000	8000
318-B	76	52.5	60	63.5	67	64	60	57
324-B	76	52	58.5	64	67.5	64	60	55
330-B	77	53	60.5	70.5	73	66	62	60.5
336-B	76	59	66.5	70	70.5	68	65	59
342-B	80	60	67.5	71.5	75	71	67.5	62
348-B	80	65	67	71.5	74.5	70.5	69	65.5
360-B	80	63.5	68.5	72	73	72.5	70.5	68

Note: Tested in accordance with ARI standard 270.95 (Not listed with ARI)

METERING DEVICE

UNIT SIZE - SERIES	INDOOR	REQUIRED SUB-COOLING °F (°C)
318-B	TXV*	8 (4.4)
324-B		10 (5.6)
330-B		
336-B		
342-B		
348-B		
360-B		

* TXV must be ordered separately when indoor coil is not equipped with a TXV. TXV must be hard-shutoff type.

RECOMMENDED TUBE DIAMETERS

UNIT SIZE	TUBE LENGTH ft (m)*	LIQUID TUBE DIAMETER (In.)	VAPOR TUBE DIAMETER (In.)
318, 324, 330	0 to 80 (0 to 24.38)	3/8	3/4
336, 342			7/8
348, 360			1 - 1/8

* For tube set over 80 ft (24.4 m) horizontal and/or 20 ft (6.10 m) vertical differential, consult Residential Split System Long-Line Application Guidelines.

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RATINGS AND PERFORMANCE

Unit Size – Series	Indoor Model [†]	AHRI Standard Ratings				
		Cooling				
		Capacity	Factory Enhancement [†]	SEER		EER
TDR	TXV					
38CKD318–M–3B	*CAP**2414**	17,000	TXV	13.0		11.0
	FB4CNF018	17,500	TDR		13.0	11.0
	FB4CNF024	17,500	TDR		13.0	11.0
	FB4BNL024	17,000	TDR		12.0	10.0
38CKD324–M–3B	*CAP**3014**	23,000	TXV	13.0		11.0
	FB4CNF024	23,400	TDR		13.0	11.0
	FB4CNF030	24,000	TDR		13.0	11.0
	FB4BNL024	23,000	TDR		12.0	10.0
38CKD330–M–3B	*CAP**3617**	28,000	TXV	13.0		11.0
	FB4CNF030	28,400	TDR		13.0	11.0
	FB4CNF036	28,400	TDR		13.0	11.0
	FB4BNL036	28,000	TDR		12.0	10.0
38CKD036–M–(3,5)B	*CAP**4221**	34,000	TXV	13.0		11.0
	FB4CNF036	35,400	TDR		13.0	11.0
	FB4CNF042	36,000	TDR		13.0	11.0
	FB4BNL036	35,000	TDR		12.0	10.0
38CKD042–M–3B	*CAP**4821**	40,000	TXV	13.0		11.0
	FB4CNF042	42,000	TDR		13.0	11.0
	FB4CNF048	42,000	TDR		13.0	11.0
	FB4BNL048	41,000	TDR		12.0	10.0
38CKD048–M–(3,5)B	*CAP**6024**	46,000	TXV	13.0		11.0
	FB4CNF048	48,000	TDR		13.0	11.0
	FB4CNF060	48,000	TDR		13.0	11.0
	FB4BNL048	48,000	TDR		12.0	10.0
38CKD060–M–(3,5)B	FB4BNL060	48,000	TDR		12.0	10.0
	*CAP**6024**	57,000	TXV	13.0		11.0
	FB4CNF060	58,500	TDR		13.0	11.0
	FB4BNL060	58,500	TDR		12.0	10.0

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* Tested Combination

† All indoor models must be installed with an R–22 TXV

EER – Energy Efficiency Ratio

SEER – Seasonal Energy Efficiency Ratio

NOTES:

1. Ratings are net values reflecting the effects of circulating fan motor heat. Supplemental electric heat is not included.
2. Tested outdoor/indoor combinations have been tested in accordance with DOE test procedures for central air conditioners. Ratings for other combinations are determined under DOE computer simulation procedures.
3. Determine actual CFM values obtainable for your system by referring to fan performance data in fan coil or furnace coil literature.
4. Minimum outdoor operating ambient in cooling mode is 55°F (12.8°C), maximum 115°F (46.1°C).

DETAILED COOLING CAPACITIES#

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)		
		Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**
		Total			Total			Total			Total			Total		
38CKD318 – B Outdoor Section With *CAP**2414A** Indoor Section																
525	72 (22.2)	20.18	10.53	1.24	19.30	10.19	1.37	18.50	9.89	1.51	17.76	9.61	1.67	17.04	9.34	1.85
	67 (19.4)	18.25	12.81	1.26	17.43	12.46	1.38	16.65	12.13	1.52	15.91	11.83	1.67	15.20	11.54	1.85
	62 (16.7)	16.56	15.06	1.28	15.78	14.69	1.39	15.05	14.34	1.53	14.37	14.01	1.67	13.75	13.68	1.85
	57 (13.9)	16.03	16.03	1.28	15.41	15.41	1.40	14.83	14.83	1.53	14.26	14.26	1.67	13.74	13.74	1.85
	72 (22.2)	20.61	11.08	1.27	19.67	10.73	1.39	18.85	10.43	1.53	18.09	10.15	1.70	17.35	9.88	1.88
600	67 (19.4)	18.66	13.68	1.29	17.80	13.33	1.41	17.00	13.00	1.55	16.25	12.69	1.70	15.52	12.40	1.88
	62 (16.7)	17.03	16.24	1.30	16.25	15.85	1.42	15.55	15.48	1.55	14.95	14.95	1.70	14.39	14.39	1.88
	57 (13.9)	16.80	16.80	1.30	16.15	16.15	1.42	15.54	15.54	1.55	14.95	14.95	1.70	14.39	14.39	1.88
	72 (22.2)	20.93	11.60	1.29	19.96	11.24	1.42	19.10	10.94	1.56	18.32	10.66	1.72	17.57	10.39	1.91
	67 (19.4)	18.96	14.51	1.31	18.08	14.15	1.43	17.26	13.83	1.57	16.50	13.52	1.73	15.76	13.22	1.91
675	62 (16.7)	17.53	17.26	1.32	16.76	16.76	1.44	16.12	16.12	1.58	15.51	15.51	1.73	14.93	14.93	1.91
	57 (13.9)	17.45	17.45	1.33	16.77	16.77	1.44	16.12	16.12	1.58	15.52	15.52	1.73	14.93	14.93	1.91
	POWER															
COOLING INDOOR MODEL																
*CAP**2414A**																
FB4BNL024																
FB4CNF018																
FB4CNF024																

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)		
		Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**
		Total			Total			Total			Total			Total		
38CKD324 – B Outdoor Section With *CAP**3014A** Indoor Section																
700	72 (22.2)	26.67	13.57	1.71	25.79	13.26	1.88	24.83	12.92	2.07	23.80	12.55	2.29	22.68	12.16	2.53
	67 (19.4)	24.32	16.76	1.69	23.53	16.45	1.86	22.66	16.11	2.05	21.70	15.73	2.26	20.63	15.32	2.51
	62 (16.7)	22.38	19.95	1.68	21.68	19.63	1.84	20.89	19.25	2.03	20.02	18.83	2.25	19.12	19.12	2.49
	57 (13.9)	21.96	21.96	1.67	21.39	21.39	1.84	20.72	20.72	2.03	19.97	19.97	2.24	19.13	19.13	2.49
	72 (22.2)	27.10	14.26	1.75	26.18	13.94	1.92	25.18	13.59	2.11	24.11	13.22	2.33	22.95	12.82	2.57
800	67 (19.4)	24.73	17.87	1.74	23.91	17.55	1.90	23.00	17.20	2.09	22.01	16.82	2.31	20.92	16.40	2.55
	62 (16.7)	22.92	21.38	1.72	22.20	22.04	1.89	21.48	21.48	2.08	20.70	20.70	2.29	19.82	19.82	2.54
	57 (13.9)	22.81	22.81	1.72	22.19	22.19	1.89	21.49	21.49	2.08	20.70	20.70	2.29	19.82	19.82	2.54
	72 (22.2)	27.41	14.90	1.79	26.45	14.58	1.96	25.42	14.22	2.15	24.32	13.85	2.37	23.14	13.45	2.62
	67 (19.4)	25.04	18.92	1.78	24.15	18.60	1.94	23.25	18.24	2.13	22.24	17.85	2.35	21.13	17.43	2.59
900	62 (16.7)	23.51	23.51	1.77	22.85	22.85	1.93	22.11	22.11	2.12	21.29	21.29	2.34	20.38	20.38	2.58
	57 (13.9)	23.51	23.51	1.77	22.85	22.85	1.93	22.11	22.11	2.12	21.29	21.29	2.34	20.38	20.38	2.58
	POWER															
COOLING INDOOR MODEL																
*CAP**3014A**																
FB4BNL024																
FB4CNF024																
FB4CNF030																

See notes on pg. 13

DETAILED COOLING CAPACITIES# (CONT.)

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)			
		Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	
		Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†		
38CKD330 – B Outdoor Section With *CAP**3617A** Indoor Section																	
875	72 (22.2)	32.52	16.95	31.44	16.56	2.28	30.31	16.15	2.50	29.12	15.72	2.75	27.88	15.28	3.04		
	67 (19.4)	29.69	20.98	28.69	20.59	2.27	27.60	20.16	2.50	26.46	19.70	2.75	25.27	19.23	3.03		
	62 (16.7)	27.33	24.98	26.43	24.56	2.25	25.44	24.07	2.48	24.42	24.19	2.73	23.44	23.44	3.02		
	57 (13.9)	26.87	26.87	26.11	26.11	2.25	25.27	25.27	2.47	24.38	24.38	2.73	23.44	23.44	3.02		
	72 (22.2)	33.01	17.79	31.89	17.39	2.33	30.71	16.97	2.55	29.49	16.54	2.80	28.22	16.10	3.08		
1000	67 (19.4)	30.15	22.34	29.12	21.94	2.32	28.00	21.50	2.55	26.83	21.04	2.80	25.61	20.56	3.08		
	62 (16.7)	27.98	26.71	27.05	23.22	2.31	26.19	23.05	2.53	25.26	23.29	2.79	24.28	23.29	3.07		
	57 (13.9)	27.88	27.88	27.08	27.08	2.31	26.19	26.19	2.53	25.26	25.26	2.79	24.28	24.28	3.07		
	72 (22.2)	33.35	18.57	32.18	18.16	2.37	30.99	17.75	2.59	29.74	17.32	2.84	28.45	16.87	3.12		
	67 (19.4)	30.49	23.62	29.43	23.22	2.37	28.29	22.77	2.59	27.11	22.31	2.84	25.88	21.82	3.13		
1125	62 (16.7)	28.72	28.72	27.86	27.86	2.36	26.94	26.94	2.59	25.97	25.97	2.84	24.96	24.96	3.12		
	57 (13.9)	28.69	28.69	27.86	27.86	2.36	26.94	26.94	2.59	25.98	25.98	2.84	24.96	24.96	3.12		
	COOLING INDOOR MODEL																
			*CAP**3617A**			CAPACITY			CAPACITY			POWER			POWER		
			FB4BNL036			1.00			1.00			1.00			1.00		
		FB4CNF030			1.01			1.01			1.01			1.01			
		FB4CNF036			1.01			1.01			1.01			1.01			

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)			
		Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	Capacity MBtuht		Sys. Power KW**	
		Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†		
38CKD336 – B Outdoor Section With *CAP**4221A** Indoor Section																	
1050	72 (22.2)	39.50	20.47	38.17	19.97	2.79	36.80	19.46	3.06	35.37	18.93	3.36	33.89	18.39	3.69		
	67 (19.4)	36.00	25.12	34.76	24.61	2.76	33.49	24.08	3.03	32.16	23.54	3.33	30.78	22.99	3.66		
	62 (16.7)	33.03	29.76	31.91	29.22	2.73	30.76	28.66	3.00	29.57	28.07	3.30	28.36	27.44	3.64		
	57 (13.9)	32.19	32.19	31.28	31.28	2.73	30.32	30.32	3.00	29.32	29.32	3.30	28.28	28.28	3.64		
	72 (22.2)	40.12	21.41	38.75	20.90	2.85	37.33	20.39	3.12	35.85	19.85	3.42	34.32	19.30	3.75		
1200	67 (19.4)	36.60	26.64	35.31	26.13	2.82	34.00	25.60	3.09	32.64	25.06	3.39	31.22	24.49	3.72		
	62 (16.7)	33.79	31.81	32.65	31.24	2.80	31.51	30.62	3.07	30.38	30.38	3.37	29.30	29.30	3.70		
	57 (13.9)	33.46	33.46	32.48	32.48	2.80	31.46	31.46	3.07	30.41	30.41	3.37	29.30	29.30	3.70		
	72 (22.2)	40.58	22.29	39.17	21.78	2.92	37.71	21.26	3.18	36.20	20.72	3.48	34.62	20.17	3.81		
	67 (19.4)	37.06	28.10	35.74	27.58	2.88	34.39	27.05	3.15	33.00	26.50	3.45	31.55	25.92	3.78		
1350	62 (16.7)	34.52	33.62	33.44	33.44	2.86	32.40	32.40	3.13	31.29	31.29	3.44	30.12	30.12	3.77		
	57 (13.9)	34.49	34.49	33.46	33.46	2.86	32.40	32.40	3.13	31.29	31.29	3.44	30.13	30.13	3.77		
	COOLING INDOOR MODEL																
			*CAP**4221A**			CAPACITY			CAPACITY			POWER			POWER		
			FB4BNL036			1.00			1.00			1.00			1.00		
		FB4CNF036			1.03			1.03			1.03			1.03			
		FB4CNF042			1.04			1.04			1.04			1.04			
					1.06			1.06			1.06			1.06			

See notes on pg. 13



DETAILED COOLING CAPACITIES# (CONT.)

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)		
		Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**
		Total			Total			Total			Total			Total		
38CKD342 – B Outdoor Section With *CAP**4821A** Indoor Section																
1225	72 (22.2)	46.48	22.29	2.93	44.90	21.74	3.24	43.25	21.18	3.59	41.52	20.59	3.98	39.73	19.99	4.41
	67 (19.4)	42.40	27.41	2.90	40.92	26.85	3.22	39.37	26.26	3.57	37.76	25.66	3.95	36.09	25.05	4.38
	62 (16.7)	38.80	32.49	2.88	37.45	31.90	3.19	36.05	31.28	3.54	34.62	30.63	3.93	33.16	32.99	4.36
1400	72 (22.2)	37.84	32.84	2.88	36.74	36.74	3.19	35.59	35.59	3.54	34.40	34.40	3.93	33.14	33.14	4.36
	67 (19.4)	47.26	23.37	3.00	45.61	22.82	3.31	43.90	22.24	3.66	42.11	21.65	4.05	40.25	21.04	4.48
	62 (16.7)	43.14	29.16	2.98	41.60	28.59	3.29	40.00	28.00	3.64	38.34	27.40	4.02	36.62	26.77	4.45
1575	72 (22.2)	39.71	34.83	2.95	38.33	34.19	3.27	36.95	36.95	3.62	35.71	35.71	4.01	34.37	34.37	4.44
	67 (19.4)	39.37	39.37	2.95	38.20	38.20	3.27	36.98	36.98	3.62	35.71	35.71	4.01	34.38	34.38	4.44
	62 (16.7)	47.81	24.39	3.07	46.13	23.83	3.38	44.36	23.25	3.73	42.52	22.65	4.12	40.61	22.04	4.55
175	72 (22.2)	43.69	30.82	3.05	42.11	30.25	3.36	40.47	29.66	3.71	38.77	29.04	4.09	37.00	28.40	4.52
	67 (19.4)	40.59	40.59	3.03	39.38	39.38	3.34	38.09	38.09	3.69	36.76	36.76	4.08	35.36	35.36	4.51
	62 (16.7)	40.61	40.61	3.03	39.38	39.38	3.34	38.10	38.10	3.69	36.76	36.76	4.08	35.36	35.36	4.51

COOLING INDOOR MODEL		CAPACITY			POWER		
		Total			Total		
		1.00			1.00		
*CAP**4821A**		1.03			1.13		
FB4BNL048		1.05			1.05		
FB4CNF042		1.05			1.05		
FB4CNF048		1.05			1.05		

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)		
		Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**
		Total			Total			Total			Total			Total		
38CKD348 – B Outdoor Section With *CAP**6024A** Indoor Section																
1400	72 (22.2)	54.00	28.14	3.51	51.98	27.37	3.81	49.95	26.60	4.16	47.88	25.83	4.54	45.76	25.05	4.97
	67 (19.4)	48.98	34.35	3.46	47.06	33.55	3.76	45.14	32.75	4.09	43.19	31.95	4.47	41.18	31.13	4.88
	62 (16.7)	44.59	40.51	3.41	42.83	39.66	3.71	41.06	38.81	4.03	39.28	37.92	4.40	37.50	37.22	4.79
1600	72 (22.2)	55.05	29.55	3.59	52.95	28.78	3.90	50.84	28.00	4.25	48.69	27.22	4.63	46.50	26.43	5.06
	67 (19.4)	49.96	36.61	3.54	47.98	35.81	3.84	46.00	35.00	4.18	43.98	34.18	4.56	41.91	33.35	4.97
	62 (16.7)	45.76	43.54	3.50	43.97	42.64	3.80	42.23	41.95	4.13	40.63	40.63	4.50	39.04	39.04	4.91
1800	72 (22.2)	55.82	30.89	3.68	53.66	30.11	3.98	51.48	29.32	4.33	49.27	28.53	4.72	47.02	27.73	5.15
	67 (19.4)	50.70	38.77	3.63	48.68	37.96	3.93	46.64	37.14	4.27	44.57	36.31	4.64	42.46	35.47	5.06
	62 (16.7)	46.87	46.53	3.59	45.22	45.22	3.89	43.64	43.64	4.23	42.02	42.02	4.60	40.35	40.35	5.02
57 (13.9)	46.81	46.81	3.59	45.23	45.23	3.89	43.64	43.64	4.23	42.02	42.02	4.60	40.35	40.35	5.02	

COOLING INDOOR MODEL		CAPACITY			POWER		
		Total			Total		
		1.00			1.00		
*CAP**6024A**		1.04			1.15		
FB4BNL048		1.04			1.15		
FB4BNL060		1.04			1.04		
FB4CNF048		1.04			1.04		
FB4CNF060		1.04			1.04		

DETAILED COOLING CAPACITIES# (CONT.)

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)							
		Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**	Capacity MBtuht	Sens†	Sys. Power KW**					
		Total			Total			Total			Total			Total							
38CKD360 – B Outdoor Section With *CAP**6024A** Indoor Section																					
1750	72 (22.2)	67.14	34.31	4.35	64.58	33.45	4.73	62.00	32.57	5.16	59.36	31.69	5.63	56.68	30.80	6.16					
	67 (19.4)	61.01	42.91	4.29	58.60	42.01	4.66	56.17	41.10	5.08	53.70	40.18	5.54	51.18	39.24	6.05					
	62 (16.7)	56.23	51.20	4.24	54.11	54.11	4.60	52.27	52.27	5.02	50.34	50.34	5.48	48.36	48.36	5.99					
2000	72 (22.2)	56.03	56.03	4.24	54.15	54.15	4.60	52.27	52.27	5.02	50.34	50.34	5.48	48.37	48.37	5.99					
	67 (19.4)	68.09	36.12	4.45	65.47	35.25	4.83	62.80	34.36	5.26	60.09	33.47	5.74	57.34	32.57	6.27					
	62 (16.7)	61.97	45.84	4.39	59.49	44.93	4.76	57.00	44.00	5.18	54.48	43.06	5.65	51.90	42.09	6.16					
2250	72 (22.2)	58.11	58.11	4.35	56.13	56.13	4.72	54.16	54.16	5.14	52.14	52.14	5.61	50.06	50.06	6.13					
	67 (19.4)	68.78	37.83	4.55	66.10	36.96	4.93	63.37	36.07	5.36	60.60	35.17	5.84	57.78	34.26	6.38					
	62 (16.7)	62.69	48.61	4.49	60.16	47.69	4.86	57.63	46.73	5.29	55.08	45.76	5.75	52.48	44.75	6.27					
	57 (13.9)	59.80	59.80	4.46	57.75	57.75	4.84	55.69	55.69	5.26	53.59	53.59	5.73	51.43	51.43	6.25					
		59.80	59.80	4.46	57.76	57.76	4.84	55.70	55.70	5.26	53.60	53.60	5.73	51.44	51.44	6.25					
COOLING INDOOR MODEL												CAPACITY					POWER				
*CAP**6024A**																					
FB4BNL060																					
FB4CNF060																					
												1.00			1.00			1.00			
												1.03			1.03			1.03			
												1.03			1.03			1.03			

* Tested combination

† 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 Btu/h (245 kW) per 1000 CFM (480 L/S) of indoor coil air for each degree below 80° F (27° C), or add 835 Btu/h (245 kW) per 1000 CFM (480 L/S) of indoor coil air per degree above 80° F (27° C).

When the required data falls between the published data, interpolation may be performed.

* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation per AHRI standard 210/240-08. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

** Unit System Power kW is total of indoor and outdoor unit kilowatts.

SYSTEM DESIGN

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 is 115°F (46.1°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 80 ft (24.38 m), indoor coil below = 200 ft (60.96 m).
6. For interconnecting refrigerant tube lengths greater than 80 ft (24.38 m) horizontal or 20 ft (6.10 m) vertical differential, consult Residential Split System Long-Line Application Guideline available from equipment distributor.
7. Crankcase heater required when interconnecting refrigerant tube length exceeds 80 ft (24.38 m).
8. If any refrigerant tubing is buried, provide a minimum 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.
9. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.

38CKD

