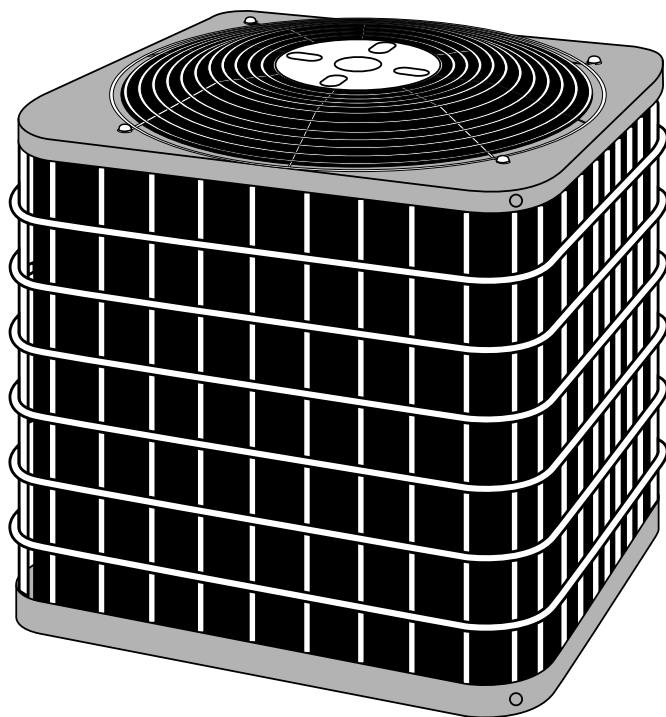




## Product Data

## 38YCC 50 Hz Heat Pump

Sizes 024 thru 060



The 38YCC 50 Hertz Outdoor Sections of Split-System Heat Pumps are designed for quiet, reliable heating during the winter and cooling during the summer. With an EER up to 9.2, these heat pump systems provide economy of operation through energy conservation when used with components designated by Carrier. They recover heat for indoor comfort from outdoor air during the heating season and, by automatically reversing the refrigerant system, remove indoor heat and excess humidity during the cooling season.

### AVAILABLE OPTIONS

**Electrical Range** — Single-phase units are available in sizes 024 and 036 in 230v 50 Hz. Three-phase units are available in sizes 036, 048, and 060 in 400v 50 Hz.

**Size Range** — The 38YCC is available in nominal sizes 024, 036, 048 and 060 to meet the needs of residential and light commercial applications.

**Compressor** — Designed specifically for heat pump duty, with energy efficiency during heating and cooling operation. The compressor is hermetically sealed against contamination to assure long life and dependable performance, internally sprung (units with reciprocating compressor), and externally mounted on rubber isolators for quiet operation. Continuous compressor operation is approved down to  $-30^{\circ}\text{F}$  ( $-34.4^{\circ}\text{C}$ ) in the heating mode, and down to  $55^{\circ}\text{F}$  ( $12.8^{\circ}\text{C}$ ) in the cooling mode. (See heating and cooling performance tables.)

**Reliable Built-In Components** — Include a suction-tube accumulator that reduces the amount of liquid refrigerant that reaches the compressor; a high pressure switch to prevent excessive pressure build-up; a low-pressure switch to stop the compressor if refrigerant charge is lost; a crankcase heater to keep compressor oil warm and free of refrigerant for maximum lubricity; an internal compressor relief valve for high-pressure protection; and 5-minute compressor delay.

**3-Phase Monitor Board**—Control board that monitors the electrical phase and prevents compressor operation if wired incorrectly.

**Discharge Silencer** — Minimizes low frequency sound and pressure pulsation generated by compressor discharge gas.

**Defrost Control Board** — Incorporates a defrost relay, defrost timer, and low-voltage terminations. The defrost control is a time and temperature initiation/termination control which includes 3 field-selectable time periods of 30, 50, and 90 minutes.

**Weather-Protective Cabinet** — The casing steel is protected with a heavy galvanized coating and treated with a layer of zinc phosphate. A modified polyester powder coating is then applied and baked on, providing each unit with a hard, smooth finish that will last for many years.

All screws on cabinet exterior are coated for a long-lasting rust-resistant, quality appearance.

**Unit Design** — All units are equipped with totally enclosed fan motors for greater reliability under rain and snow

conditions. The large, wraparound coil uses copper tube and enhanced aluminum fin and is designed for optimum heat transfer during heating and cooling. Vertical air discharge carries sound and air up and away from adjacent patio areas and foliage. Coils can be cleaned with a common garden hose.

**Sound Hood** — Sizes 036-060 have a compressor sound hood for noise attenuation.

**External Service Valves** — Both service valves are brass, front seating type with sweat-type field 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.

## Quality Assurance

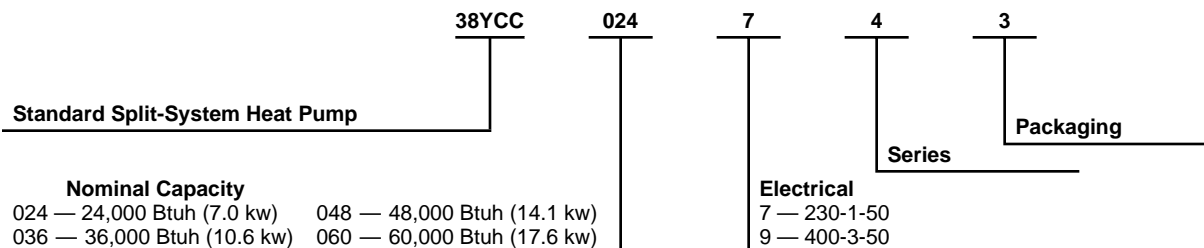


APPROVALS  
ISO 9001  
EN 29001  
BS 5750 PART 1  
ANSI/ASQC Q91

CERTIFICATE NO. FM 28768

**REGISTERED QUALITY SYSTEM**

## Model number nomenclature



# Physical data

UNIT SIZE-SERIES	024-74	036-74, 94	048-95	060-95
OPERATING WT (Lb/Kg)	140 / 63.5	215 / 97.5	226 / 102.5	259 / 117.5
COMPRESSOR Manufacturer Type	Copeland Reciprocating	Copeland Reciprocating	Copeland Scroll	Copeland Scroll
REFRIGERANT Control Charge (Lb/Kg) @ 15 ft (4.57m)	4.84 / 2.20	7.93 / 3.60	R-22 Piston 7.25 / 3.29	10.75 / 4.88
CONDENSER FAN Air Discharge Air Qty (CFM / l/s) Motor HP Motor RPM (50 Hz)	2160 / 1020 1/10 850	2750 / 1300 1/4 900	Propeller Type, Direct Drive Vertical 2750 / 1300 1/4 900	2750 / 1300 1/4 900
CONDENSER COIL Face Area (Sq ft/m <sup>2</sup> ) Fins per In. / Fins per Cm Rows Circuits	12.4 / 1.15 20 / 8 1 2	22.4 / 2.08 20 / 8 1 3	18.7 / 1.74 20 / 8 1 4	22.4 / 2.08 20 / 8 2 6
CONNECTION (In./mm ID) Vapor Liquid	5/8 / 15.875	3/4 / 19.05	Sweat 7/8 / 22.225 3/8 / 9.525	7/8 / 22.225
REFRIG TUBES* (In./mm OD) Vapor (0–50 Ft/0–15.24m Tube Length) Vapor (Max Diameter for Long-Line Applications) Liquid (0–50 Ft/0–15.24m Tube Length) Liquid (For Long-Line Applications)	5/8 / 15.875  3/4 / 19.05	3/4 / 19.05  7/8 / 22.225	7/8 / 22.225  1-1/8 / 28.575  3/8 / 9.525 3/8 / 9.525	1-1/8 / 28.575  1-1/8 / 28.575

\* Tube sizes are for lengths up to 50 ft (15.24m). For lengths over 50 ft (15.24m), consult the Residential Split-System Long-Line Application Guideline.  
**NOTE:** See unit Installation Instructions for proper installation.

## METERING DEVICE

UNIT SIZE-SERIES	OUTDOOR PISTON	INDOOR PISTON*
024-74	49	63
036-74, 94	61	73
048-95	73	90
060-95	76	96

\*Piston listed is for any approved coil combination.

## CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE-SERIES	REQUIRED SUBCOOLING (°F/°C)
024-74	12/6.7
036-74	9/5.0
036-94	11/6.1
048-95	9/5.0
060-95	10/5.5

# Accessories

ORDERING NUMBER	DESCRIPTION
KAATD0101TDR	Time-Delay Relay — All Sizes
KSALA0201R22	Low-Ambient Pressure Switch — All Sizes
P251-0083 (RCD)*	Low-Ambient Controller — All Sizes
32LT660004 (RCD)	MotorMaster® Control — Sizes 024 (74), 036 (74), 048 (74)
32LT660005 (RCD)	MotorMaster® Control — Sizes 036 (94), 048 (95), 060 (95)
KAAFT0101AAA†	Evaporator Freeze Thermostat — All Sizes
KHAIR0101AAA†	Isolation Relay — All Sizes
KSAHS1001AAA	Start Assist — Capacitor and Relay — Size 024 (74)
KSAHS1301AAA	Start Assist — Capacitor and Relay — Size 036 (74)
KAACS0101PTC	Start Assist — PTC — Size 024 (74)
KAACS0201PTC	Start Assist — PTC — Size 036 (74)
KHAOT0301FST	Outdoor Thermostat — All Sizes
KHAOT0201SEC	Secondary Outdoor Thermostat — All Sizes
KHAIC0101AAA	Interface Control (Optimizer II®) — All Sizes
KSATX0601HSO‡	Bi-Flow TXV (Hard Shutoff) — Sizes 024, 036
KSATX0701HSO‡	Bi-Flow TXV (Hard Shutoff) — Sizes 048, 060
KHATX0301RPB	Bi-Flow TXV (RPB) — Size 024
KHATX0501RPB	Bi-Flow TXV (RPB) — Size 036
KHATX0601RPB	Bi-Flow TXV (RPB) — Size 048
KHATX0701RPB	Bi-Flow TXV (RPB) — Size 060
P504-8083S (RCD)	Bi-Flow Filter Drier — Sizes 024, 036
P504-8163S (RCD)	Bi-Flow Filter Drier — Sizes 048, 060
KHALS0401LLS	Liquid-Line Solenoid Valve (LSV) — All Sizes
P165-0001 (RCD)	Unit Risers — All Sizes (2 Required/Unit)

\* Isolation relay required.

† Consult low-ambient controller Installation Instructions for application.

‡ Hard shutoff TXV requires compressor start assist.

THERMOSTAT	DESCRIPTION
TSTATCCNHP01-B	Thermostat — Auto Changeover, Non-Programmable, °F/°C, 2-Stage Heat, 1-Stage Cool
TSTATCCPHP01-B	Thermostat — Auto Changeover, 7-Day Programmable, °F/°C, 2-Stage Heat, 1-Stage Cool
TSTATCCPDF01-B	Thermostat — Auto Changeover, 7-Day Programmable, °F/°C, Dual Fuel Must be used with Outdoor Air Temperature Sensor (TSTATXXSEN01-B)
TSTATCCPRH01-B*	Thermidistat Control — Non-Programmable/Programmable Thermostat with Humidity Control (For use in Dual Fuel, AC, HP, and 2S applications. Includes Outdoor Air Temperature Sensor.)
TSTATCCBHP01*	Builder's Thermostat — Manual Changeover, Non-Programmable, °F, 2-Stage Heat, 1-Stage Cool, Heat Pump
TSTATXXSEN01-B†	Outdoor Air Temperature Sensor
TSTATXXNBP01‡	Backplate for Non-Programmable Thermostat
TSTATXXBP01‡	Backplate for Programmable Thermostat
TSTATXXBBP01‡	Backplate for Builder's Thermostat
TSTATXXCNV10**	Thermostat Conversion Kit (4 to 5 wire) — 10 Pack

\* Do not use in zoning heat pump applications.

† Outdoor temperature sensor is an accessory for all Carrier electronic thermostats, except the non-programmable air conditioner version and builder's thermostats. It allows the temperature at a remote location (outdoors) to be displayed on the thermostat.

The outdoor air temperature sensor *must be* used with the dual fuel thermostat.

The outdoor air temperature sensor is included with the Thermidistat Control and dual fuel thermostat.

‡ This plate is designed to cover surrounding wall area located behind thermostat.

\*\* Thermostat conversion kit is a 24-vac accessory that can turn a 4-wire thermostat application into a 5-wire application. This kit can also be used to replace a broken thermostat wire, or add an extra wire when needed.

# Accessory usage guideline

ACCESSORY	REQUIRED FOR LOW-AMBIENT APPLICATIONS (Below 55°F/12.8°C)	REQUIRED FOR LONG-LINE APPLICATIONS* (Over 50 Ft/15.24m)	REQUIRED FOR BURIED LINE APPLICATIONS† (Over 3 Ft/0.914m)
Crankcase Heater	Yes	Yes	Yes
Evaporator Freeze Thermostat	Yes	No	No
Winter Start Control	Yes‡	No	No
Accumulator	No	No	Yes
Compressor Start Assist Capacitor and Relay	Yes	Yes	Yes
Low Ambient Controller, MotorMaster® Control, or Low-Ambient Pressure Switch	Yes	No	No
Wind Baffle	See Low-Ambient Instructions	No	No
Unit Risers	Recommended	No	No
Liquid-Line Solenoid Valve or Hard Shutoff TXV	No	See Long-Line Application Guideline	Yes

\* For tubing line sets between 50 and 175 ft (15.24 and 53.34m), refer to the Residential Split-System Long-Line Application Guideline.

† For buried line applications, refer to the Residential Split System Buried Line Application Guideline.

‡ Only when low-pressure switch is used.

## Accessory description and usage (Listed alphabetically)

### 1. Compressor Start Assist — Capacitor and Relay

Start capacitor and start relay gives “hard” boost to compressor motor at each start-up.

SUGGESTED USE: Installations where interconnecting tube length exceeds 50 ft (15.24m).

Installations where outdoor design temperature exceeds 105°F (40.6°C).

Replacement installations with hard shutoff expansion valve on indoor coil (single-phase reciprocating compressors only).

Installations where Liquid-Line Solenoid Valve has been added.

Units installed with Low-Ambient Controller.

### 2. Compressor Start Assist — PTC

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

SUGGESTED USE: Installations with marginal power supply.

Replacement installations with rapid pressure balance (RPB) expansion valve on indoor coil.

### 3. Evaporator Freeze Thermostat

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

SUGGESTED USE: All units where Winter Start Control has been added.

All units where Low-Ambient Controller has been added.

### 4. Filter Drier—Bi-Flow

A device for removing contaminants from refrigerant circulating in a heat pump system: 2-direction flow.

SUGGESTED USE: All split-system heat pumps.

### 5. Interface Control (Optimizer II®)

An electric control for controlling a heat pump and gas or oil furnace system for maximum energy savings. It allows heat pump to operate down to a predetermined economic balance point temperature, then switches to allow furnace operation only below that temperature. Requires outdoor thermostat to be adjusted for economic balance point temperature.

SUGGESTED USE: All heat pump and gas- or oil-fired furnace combination systems unless Duel Fuel Thermostat or Thermidistat™ Control is used.

### 6. Isolation Relay

An SPDT relay which switches the Low-Ambient Controller out of the outdoor fan motor circuit when heat pump switches to heating mode.

SUGGESTED USE: All heat pumps where Low-Ambient Controller has been added.

### 7. Liquid-Line Solenoid Valve (LSV)

An electrically operated shutoff valve to be installed at the outdoor unit and which stops and starts refrigerant liquid flow in response to compressor operation. Maintains a column of refrigerant liquid ready for action at next compressor operation cycle.

**NOTE:** Compressor Start Assist–Capacitor and Relay must also be used.

SUGGESTED USE: In certain long-line applications. Refer to the Residential Split-System Long-Line Application Guideline.

### 8. Low-Ambient Controller

Head pressure controller is a cycle control device activated by a temperature sensor mounted on a header tube of the outdoor coil. It is designed to cycle the outdoor fan motor in order to maintain condensing temperature within normal operating limits (approximately 100°F (37.8°C) high and 60°F (15.6°C) low). The control will maintain working head pressure at low-ambient temperatures down to 0°F (–17.8°C) when properly installed.

SUGGESTED USE: Cooling operation at outdoor temperatures below 55°F (12.8°C).

## Accessory description and usage (Listed alphabetically) continued

### 9. MotorMaster® Control

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).

SUGGESTED USE: Cooling operation at outdoor temperatures below 55°F (12.8°C).  
All commercial installations.

### 10. Outdoor Air Temperature Sensor

A device that allows the temperature at a remote location (outdoors) to be displayed at the thermostat.

SUGGESTED USE: All corporate programmable thermostats.

### 11. Outdoor Thermostat

An SPDT temperature actuated switch which turns on supplemental electric heaters when outdoor air temperature drops below set point.

SUGGESTED USE: Heat pump installations with multiple-stage supplemental heaters

### 12. Secondary Outdoor Thermostat

An SPDT temperature actuated switch which turns on a third stage of supplemental electric heaters when outdoor air temperature drops below the second-stage set point.

SUGGESTED USE: Heat pump installations where 3-stage operation of supplemental heaters is desired.

### 13. 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. Kit includes valve, adapter tubes, and external equalizer tube. Both hard shutoff and RPB valves are available. Hard shutoff TXVs used with single-phase reciprocating compressors require Compressor Start Assist — Capacitor and Relay.

SUGGESTED USE: For improved system performance in cooling mode for certain combinations of indoor and outdoor units. Refer to ARI Unitary Directory.  
Required for use on all zoning systems.

### 14. Time-Delay Relay

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

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

### 15. Unit Risers

Six-in. tall plastic rails that are used to elevate outdoor units above mounting pad. The risers are adjustable from 24- to 34-in. long.

SUGGESTED USE: Heat pump installations in light to moderate snowfall areas.

Coastal installations.

Windy areas where debris can circulate.

Roof-top installations.

## Electrical data

OUTDOOR UNIT	V/PH	OPER VOLTS*		COMPRESSOR		FAN FLA	MCA	MIN WIRE SIZE** 60°C/75°C	MAX LENGTH (Ft)‡ 60°C/75°C	MAX LENGTH (m)‡ 60°C/75°C	MAX FUSE† OR CKT BKR AMPS
		Max	Min	LRA	RLA						
024-74	230-1	253	207	68.0	11.5	1.4	15.8	14/14	55/39	16.7/11.9	25
036-74				94.0	16.5	1.6	22.2	12/12	65/47	19.8/14.3	35
036-94	400-3	440	360	42.0	6.4	0.7	8.7	14/14	260/247	79.2/75.3	15
048-95				63.0	7.9	0.7	10.7	14/14	165/157	50.3/47.9	15
060-95				74.0	9.0	0.7	11.9	14/14	165/157	50.3/47.9	20

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

† Time-delay fuse.

‡ Length shown is as measured 1 way along the wire path between the unit and the service panel for voltage drop not to exceed 2%.

\*\* If wire is applied at ambient greater than 30°C (86°F), consult Table 310-16 of the NEC (ANSI/NFPA 70). The ampacity of nonmetallic-sheathed-cable (NM), trade name ROMEX, shall be that of 60°C (140°F) conductors, per the NEC (ANSI/NFPA 70) Article 336-26.

If other than uncoated (non-plated), 60° or 75°C (140° or 167°F) insulation, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (ANSI/NFPA 70).

**FLA** — Full Load Amps

**LRA** — Locked Rotor Amps

**MCA** — Minimum Circuit Amps

**RLA** — Rated Load Amps

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

# Performance summary\*

UNIT SIZE-SERIES	INDOOR MODEL	NOMINAL AIRFLOW		COOLING CAP @ 95°F (35°C)				HEATING CAPACITY					
				Rated Capacity		Power KW	Rated EER	Hi Temp 47°F (8°C)			Lo Temp 17°F (-3°C)		
				BTUH	KW			BTUH	KW	Power KW	BTUH	KW	Power KW
024-74	F(A,B)4ASF024†	800	380	23,000	6.7	2.72	9.00	23,000	6.7	2.40	14,000	4.1	1.72
	F(A,B)4ASF030	800	380	23,600	6.9	2.73	9.00	23,000	6.7	2.38	14,000	4.1	1.70
	FG3ASA024	800	380	22,000	6.4	2.77	8.50	23,000	6.7	2.51	13,829	4.1	1.80
036-74, 94	F(A,B)4ASF036†	1200	550	35,000	10.3	3.85	9.00	36,000	10.5	3.40	22,100	6.5	2.65
	F(A,B)4AS(F,B)042	1200	550	35,500	10.4	3.80	9.20	37,000	10.8	3.30	22,145	6.5	2.57
	FG3ASA036	1200	550	34,000	10.0	3.83	8.80	36,000	10.5	3.43	21,949	6.4	2.67
048-74, 95	F(A,B)4AS(F,B)048†	1600	750	46,500	13.6	4.98	9.00	47,000	13.8	4.27	28,000	8.2	3.71
	F(A,B)4AS(F,B)060	1600	750	47,500	13.9	5.03	9.00	47,000	13.8	4.16	28,004	8.2	3.61
	FG3ASA048	1600	750	45,500	13.3	4.97	8.50	47,000	13.8	4.39	27,909	8.2	3.81
	FG3ASA060	1600	750	46,500	13.6	5.01	8.50	47,000	13.8	4.35	28,010	8.2	3.78
060-95	F(A,B)4AS(F,B)060†	1900	900	57,000	16.7	6.05	9.00	59,000	17.3	5.20	39,000	11.4	4.44
	FB4ASB070	1900	900	58,000	17.0	6.15	9.00	59,000	17.3	5.01	39,150	11.5	4.28
	FG3ASA060	1900	900	56,500	16.6	6.02	9.00	57,500	16.8	5.37	38,793	11.4	4.58

\* 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 67°F (19°C) wb indoor entering air temperature and 95°F (35°C) db air entering outdoor unit.

**High-Temperature 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.

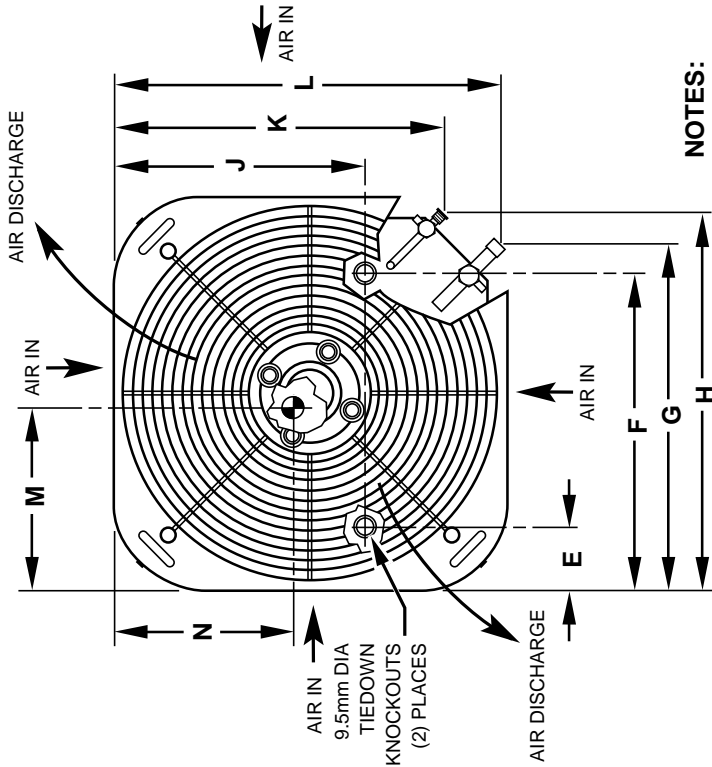
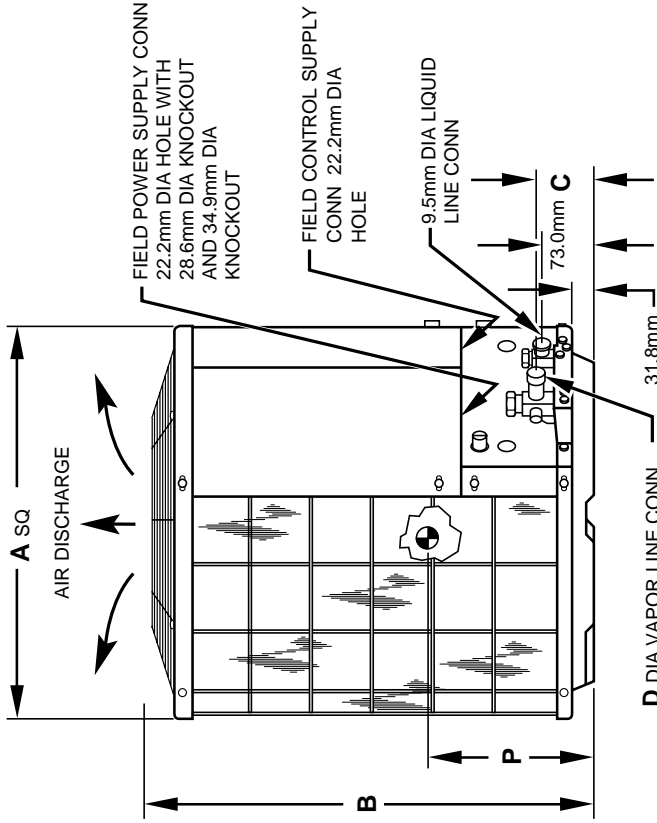
**Low-Temperature Heating Standard:** 70°F (21°C) db indoor entering air temperature and 17°F (-8°C) db 15°F (11°C) wb air entering outdoor unit.

† Outdoor section/indoor section combination tested in accordance with DOE test procedures for heat pumps. Ratings for other combinations are determined under DOE computer simulation procedures.

# Sound power

UNIT SIZE	SOUND LEVEL (dBA)	A – WEIGHTED SOUND POWER LEVELS (dBA) WITHIN OCTAVE BAND SHOWN						
		125	250	500	1000	2000	4000	8000
024	76	54.0	63.0	63.5	68.0	66.0	67.5	64.5
036	76	56.5	65.5	68.5	70.5	69.0	67.5	62.5
048	75	53.5	60.5	67.0	69.5	68.0	64.0	60.0
060	75	53.0	60.5	68.0	70.0	68.5	65.5	61.0

# Dimensions (S.I.)



## NOTES:

1. Allow 762.0 mm clearance to service side of unit, 1219.2 mm above unit, 152.4 mm on one side, 304.8 mm on remaining side, and 609.6 mm between units for proper airflow.
2. Minimum outdoor operating ambient in cooling mode is 13°C (unless low ambient control is used) max. 52°C.
3. Maximum outdoor operating ambient in heating mode is 19°C.
4. Series designation is the 13th position of the unit model number.
5. Center of gravity

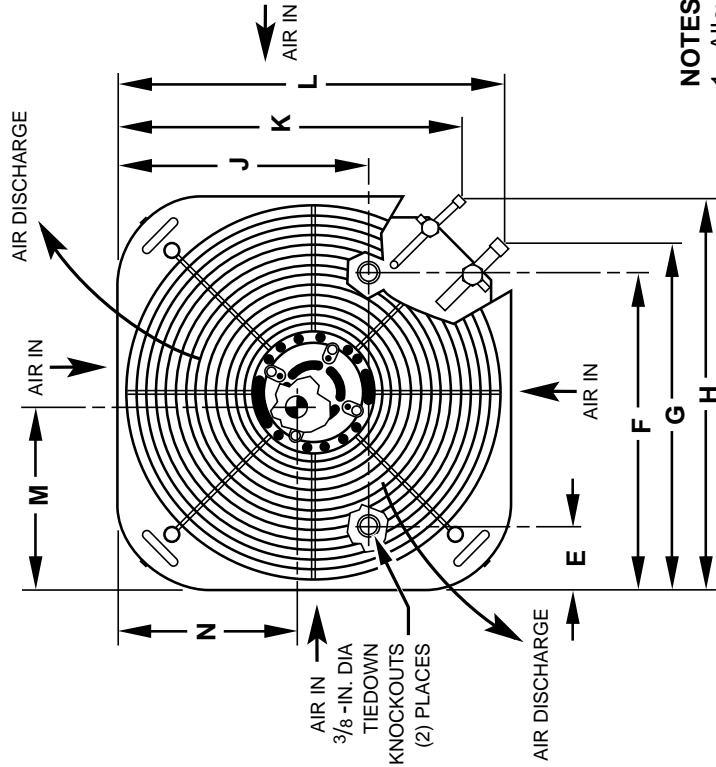
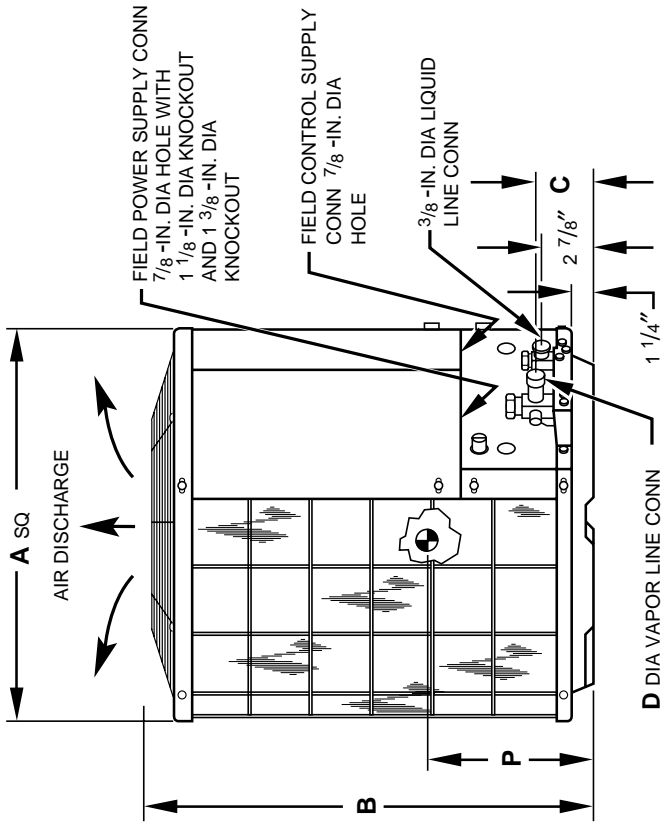
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## DIMENSIONS (mm)

UNIT SIZE	SERIES	A	B	C	D	E	F	G	H	J	K	L	M	N	P	MINIMUM MOUNTING PAD DIMENSIONS
024	74	571.5	862.0	81.0	15.9	93.6	460.4	501.7	549.3	365.1	479.4	560.4	317.5	304.8	355.6	571.5 x 571.5
036	74, 94	762.0	1014.4	82.6	19.1	165.1	596.9	692.2	739.8	508.0	669.9	750.9	381.0	400.1	393.7	762.0 x 762.0
048	95	762.0	862.0	82.6	22.2	165.1	596.9	692.2	739.8	508.0	669.9	750.9	387.4	396.9	393.7	762.0 x 762.0
060	95	762.0	862.0	82.6	22.2	165.1	596.9	692.2	739.8	508.0	669.9	750.9	396.9	400.1	384.2	762.0 x 762.0



# Dimensions (English)



**NOTES:**

1. Allow 30 in. clearance to service side of unit, 48 in. above unit, 6 in. on one side, 12 in. on remaining side, and 24 in. between units for proper airflow.
2. Minimum outdoor operating ambient in cooling mode is 55°F (unless low ambient control is used) max. 125°F.
3. Maximum outdoor operating ambient in heating mode is 66°F.
4. Series designation is the 13th position of the unit model number.
5. Center of gravity

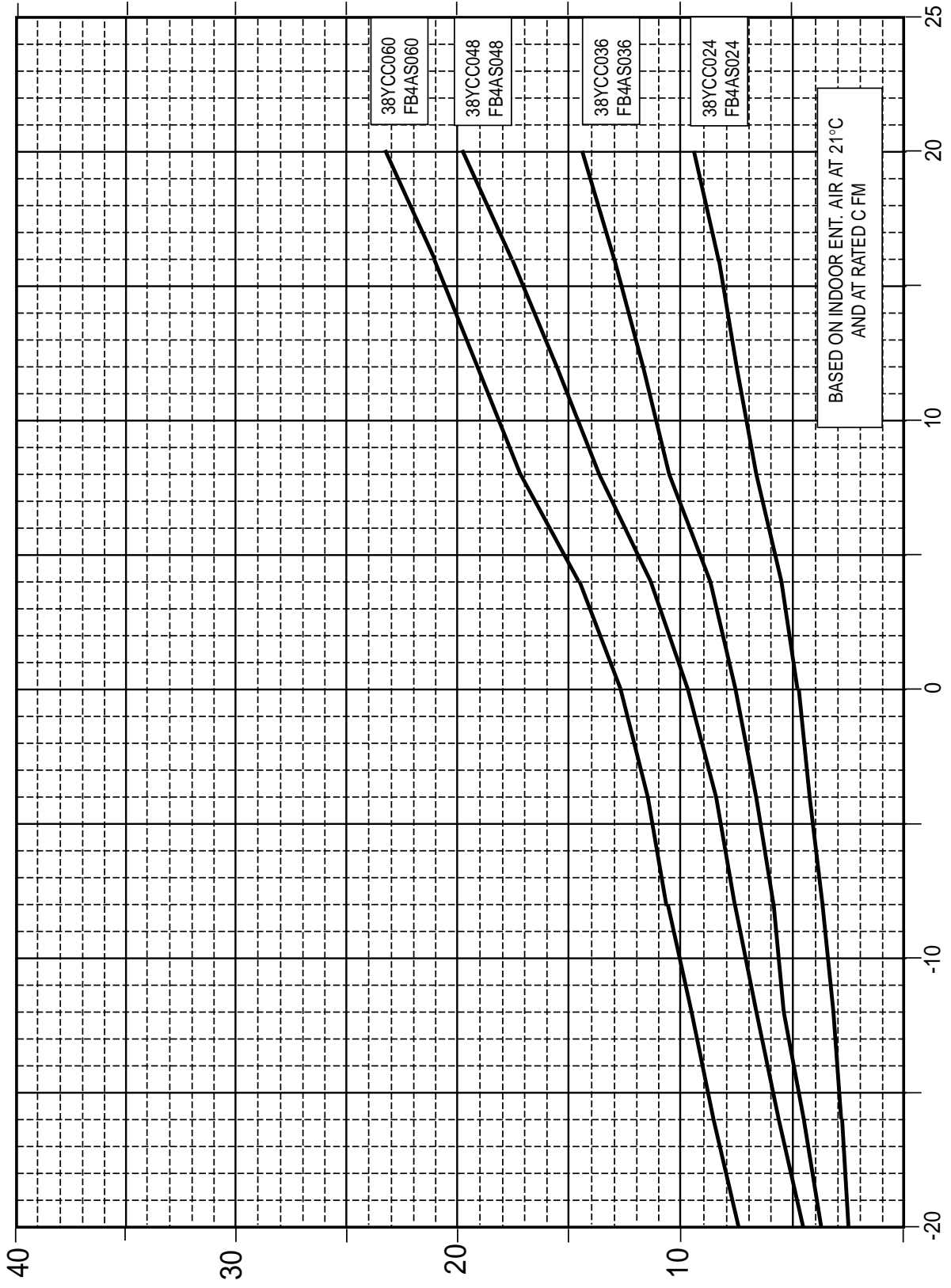
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**DIMENSIONS (IN.)**

UNIT SIZE	SERIES	A	B	C	D	E	F	G	H	J	K	L	M	N	P	MINIMUM MOUNTING PAD DIMENSIONS
024	74	22-1/2	33-15/16	3-3/16	5/8	3-11/16	18-1/8	19-3/4	21-5/8	14-3/8	18-7/8	22-1/16	12-1/2	12	14	22-1/2 x 22-1/2
036	74, 94	30	39-15/16	3-1/4	3/4	6-1/2	23-1/2	27-1/4	29-1/8	20	26-3/8	29-9/16	15	15-3/4	15-1/2	30 x 30
048	95	30	33-15/16	3-1/4	7/8	6-1/2	23-1/2	27-1/4	29-1/8	20	26-3/8	29-9/16	15-1/4	15-5/8	15-1/2	30 x 30
060	95	30	33-15/16	3-1/4	7/8	6-1/2	23-1/2	27-1/4	29-1/8	20	26-3/8	29-9/16	15-5/8	15-3/4	15-1/8	30 x 30

# 38YCC BALANCE POINT WORKSHEET

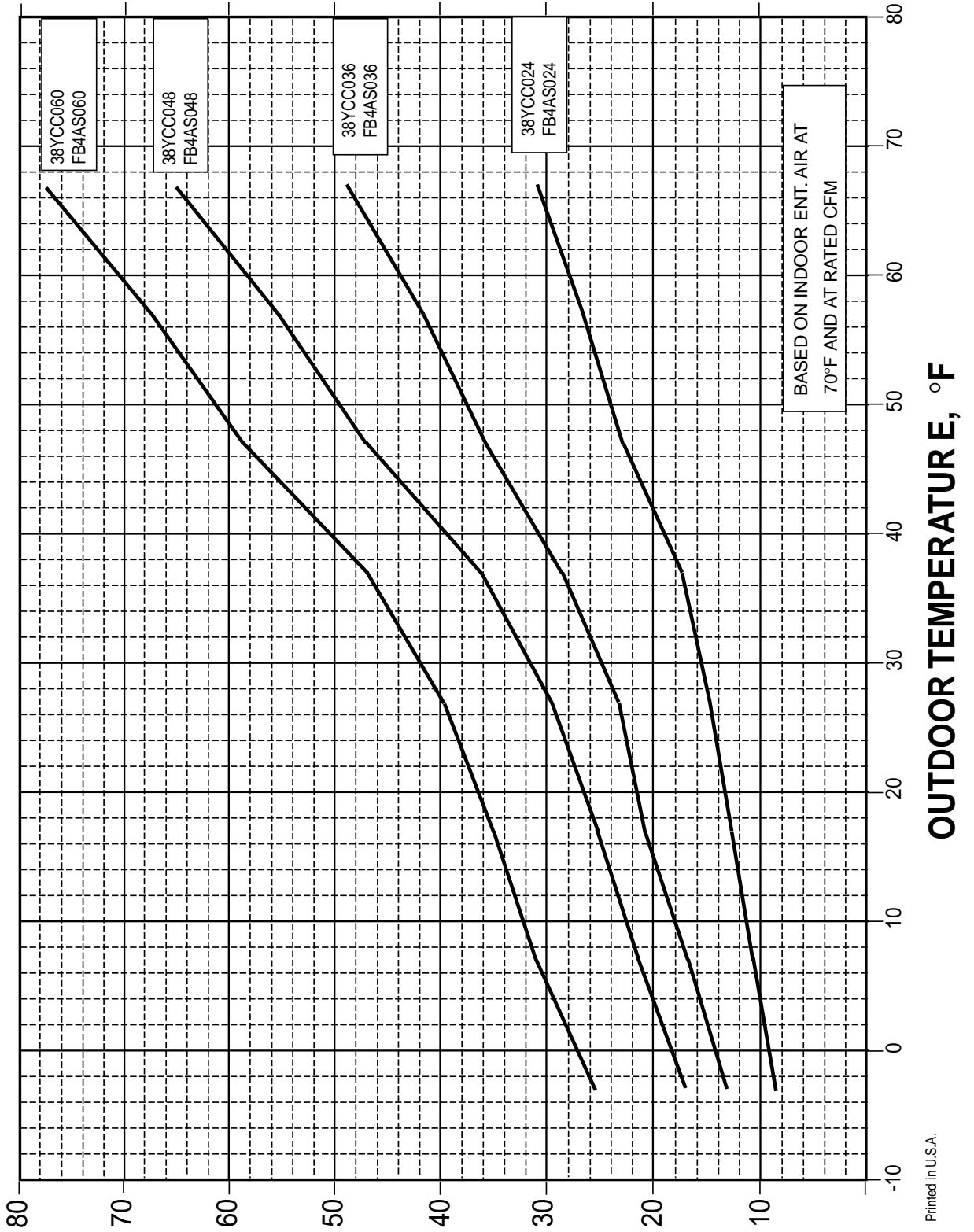
## BUILDING HEAT LOSS, KW UNIT INTEGRATED HEATING CAPACITY, KW



OUTDOOR TEMPERATURE, °C

**BUILDING HEAT LOSS, 1000 BTU/HR  
UNIT INTEGRATED HEATING CAPACITY, 1000 BTU/HR**

**38YCC BALANCE POINT WORKSHEET**



Printed in U.S.A.

# Detailed cooling capacities\* (S.I.)

COIL AIR		CONDENSER ENTERING AIR TEMPERATURES °C																				
		28			32			36			40			44			48			52		
L/S	(C) EWB	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
<b>38YCC024-74 Outdoor Section With F(A,B)4ASF024 Indoor Section</b>																						
340	22	7.83	3.94	2.56	7.50	3.81	2.68	7.17	3.69	2.80	6.84	3.57	2.91	6.50	3.44	3.02	6.16	3.32	3.13	5.81	3.20	3.23
	20	7.32	4.64	2.49	7.01	4.51	2.61	6.70	4.39	2.72	6.38	4.26	2.83	6.06	4.14	2.93	5.73	4.01	3.03	5.40	3.88	3.13
	18	6.84	5.33	2.43	6.55	5.20	2.54	6.25	5.06	2.65	5.96	4.93	2.75	5.66	4.79	2.85	5.36	4.64	2.95	5.05	4.48	3.05
	16	6.46	5.89	2.38	6.19	5.74	2.49	5.93	5.58	2.59	5.66	5.42	2.70	5.39	5.25	2.80	5.12	5.06	2.90	4.84	4.84	2.99
14	6.25	6.22	2.35	6.03	6.00	2.46	5.80	5.79	2.57	5.57	5.56	2.68	5.34	5.33	2.79	5.09	5.09	2.89	4.84	4.84	2.99	
380	22	7.96	4.09	2.61	7.62	3.96	2.73	7.28	3.84	2.85	6.93	3.71	2.96	6.58	3.59	3.07	6.23	3.47	3.18	5.88	3.35	3.28
	20	7.45	4.86	2.54	7.12	4.74	2.66	6.80	4.61	2.77	6.47	4.48	2.88	6.14	4.35	2.99	5.80	4.23	3.09	5.47	4.10	3.18
	18	6.97	5.62	2.48	6.67	5.48	2.59	6.36	5.34	2.70	6.06	5.20	2.81	5.76	5.04	2.91	5.46	4.86	3.01	5.17	4.67	3.11
	16	6.61	6.20	2.43	6.34	6.03	2.54	6.06	5.87	2.65	5.79	5.69	2.76	5.52	5.49	2.86	5.26	5.26	2.96	5.00	5.00	3.07
14	6.47	6.45	2.41	6.23	6.22	2.53	6.00	5.99	2.64	5.76	5.75	2.75	5.51	5.51	2.86	5.26	5.26	2.96	5.00	5.00	3.07	
420	22	8.06	4.23	2.66	7.72	4.11	2.78	7.37	3.98	2.89	7.01	3.86	3.01	6.65	3.73	3.12	6.29	3.61	3.23	5.93	3.49	3.33
	20	7.55	5.08	2.59	7.22	4.95	2.70	6.88	4.82	2.82	6.54	4.70	2.93	6.21	4.57	3.03	5.87	4.44	3.13	5.52	4.31	3.23
	18	7.08	5.89	2.53	6.77	5.75	2.64	6.46	5.60	2.75	6.16	5.43	2.86	5.86	5.24	2.96	5.56	5.05	3.07	5.26	4.84	3.17
	16	6.74	6.48	2.48	6.46	6.30	2.59	6.18	6.11	2.70	5.91	5.90	2.81	5.65	5.65	2.92	5.39	5.39	3.03	5.12	5.12	3.13
14	6.65	6.64	2.47	6.41	6.40	2.59	6.16	6.15	2.70	5.91	5.91	2.81	5.65	5.65	2.92	5.39	5.39	3.03	5.13	5.13	3.13	

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	024	1.00	1.00	FG3ASA	024	0.97	1.02
	030	1.02	1.00		—	—	—

## 38YCC036-74, 94 Outdoor Section With F(A,B)4ASF036 Indoor Section

500	22	11.9	6.04	3.60	11.4	5.86	3.77	10.9	5.68	3.94	10.4	5.50	4.11	9.92	5.32	4.27	9.42	5.14	4.42	8.90	4.96	4.58
	20	11.1	7.14	3.51	10.6	6.95	3.67	10.2	6.77	3.83	9.69	6.58	3.99	9.21	6.40	4.14	8.73	6.21	4.29	8.25	6.03	4.43
	18	10.3	8.21	3.42	9.91	8.01	3.58	9.48	7.81	3.74	9.04	7.61	3.89	8.60	7.40	4.04	8.17	7.16	4.18	7.73	6.90	4.32
	16	9.78	9.05	3.36	9.39	8.82	3.51	8.99	8.58	3.67	8.60	8.34	3.82	8.21	8.07	3.96	7.82	7.77	4.11	7.43	7.43	4.26
14	9.51	9.47	3.32	9.18	9.15	3.48	8.85	8.83	3.64	8.51	8.49	3.80	8.16	8.15	3.95	7.80	7.80	4.11	7.43	7.43	4.26	
560	22	12.1	6.29	3.68	11.6	6.11	3.85	11.1	5.93	4.02	10.6	5.75	4.18	10.1	5.56	4.35	9.53	5.38	4.50	8.99	5.20	4.65
	20	11.3	7.51	3.58	10.8	7.32	3.75	10.3	7.13	3.91	9.83	6.94	4.07	9.33	6.75	4.22	8.84	6.56	4.37	8.34	6.37	4.51
	18	10.5	8.67	3.49	10.1	8.47	3.65	9.65	8.25	3.81	9.21	8.03	3.97	8.77	7.77	4.12	8.33	7.49	4.27	7.90	7.20	4.42
	16	10.0	9.53	3.43	9.61	9.28	3.59	9.21	9.02	3.75	8.81	8.74	3.90	8.43	8.40	4.06	8.04	8.04	4.21	7.66	7.66	4.36
14	9.84	9.82	3.41	9.49	9.47	3.58	9.14	9.13	3.74	8.78	8.77	3.90	8.42	8.41	4.06	8.04	8.04	4.21	7.66	7.66	4.36	
640	22	12.3	6.61	3.77	11.8	6.43	3.94	11.3	6.24	4.11	10.7	6.06	4.28	10.2	5.87	4.44	9.65	5.69	4.60	9.10	5.50	4.75
	20	11.5	7.98	3.67	11.0	7.78	3.84	10.5	7.59	4.00	9.98	7.40	4.16	9.47	7.20	4.32	8.96	7.01	4.47	8.45	6.81	4.61
	18	10.8	9.24	3.59	10.3	9.00	3.75	9.85	8.75	3.91	9.41	8.46	4.07	8.98	8.16	4.23	8.53	7.86	4.38	8.08	7.56	4.53
	16	10.3	10.1	3.53	9.87	9.79	3.69	9.47	9.47	3.86	9.09	9.09	4.02	8.70	8.70	4.18	8.31	8.31	4.34	7.91	7.91	4.49
14	10.2	10.2	3.52	9.84	9.84	3.69	9.47	9.47	3.86	9.09	9.09	4.02	8.70	8.70	4.18	8.31	8.31	4.34	7.92	7.92	4.49	

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	036	1.00	1.00	FG3ASA	036	0.98	1.00
F(A,B)4AS(F,B)	042	1.02	0.99		—	—	—

See notes on pg. 14.

# Detailed cooling capacities\* (S.I.) continued

COIL AIR		CONDENSER ENTERING AIR TEMPERATURES °C																				
		28		32		36		40		44		48		52								
		Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**	Capacity Kw†		Sys. Power Kw**						
L/S	(C) EWB	Total	Sens‡	Total	Sens‡	Total	Sens‡	Total	Sens‡	Total	Sens‡	Total	Sens‡	Total	Sens‡	Total	Sens‡	Total	Sens‡			
<b>38YCC048-95 Outdoor Section With F(A,B)4AS(F,B)048 Indoor Section</b>																						
650	22	15.4	7.87	4.50	14.9	7.69	4.79	14.4	7.51	5.09	13.9	7.32	5.41	13.3	7.13	5.75	12.8	6.94	6.11	12.3	6.75	6.48
	20	14.5	9.38	4.41	14.0	9.19	4.69	13.5	9.00	4.98	13.0	8.81	5.29	12.5	8.62	5.63	12.0	8.42	5.97	11.5	8.23	6.33
	18	13.6	10.8	4.32	13.2	10.7	4.59	12.7	10.5	4.88	12.3	10.3	5.18	11.8	10.1	5.51	11.3	9.82	5.84	10.8	9.56	6.19
	16	12.9	12.0	4.25	12.5	11.8	4.52	12.1	11.5	4.80	11.7	11.3	5.11	11.3	11.0	5.43	10.9	10.7	5.75	10.4	10.4	6.09
14	12.6	12.6	4.21	12.3	12.3	4.49	12.0	11.9	4.78	11.6	11.6	5.09	11.2	11.2	5.41	10.8	10.8	5.75	10.4	10.4	6.09	
750	22	15.6	8.26	4.60	15.1	8.08	4.89	14.6	7.89	5.19	14.1	7.71	5.51	13.5	7.51	5.86	13.0	7.32	6.22	12.4	7.13	6.59
	20	14.7	9.96	4.51	14.2	9.78	4.79	13.7	9.59	5.08	13.2	9.39	5.39	12.7	9.19	5.73	12.2	9.00	6.08	11.7	8.80	6.44
	18	13.9	11.6	4.42	13.4	11.4	4.69	13.0	11.2	4.98	12.5	10.9	5.29	12.0	10.7	5.62	11.6	10.4	5.97	11.1	10.1	6.32
	16	13.3	12.8	4.35	12.9	12.5	4.63	12.5	12.2	4.92	12.0	12.0	5.22	11.6	11.6	5.56	11.2	11.2	5.90	10.8	10.8	6.25
14	13.1	13.1	4.34	12.8	12.7	4.62	12.4	12.4	4.91	12.0	12.0	5.22	11.6	11.6	5.56	11.2	11.2	5.90	10.8	10.8	6.25	
850	22	15.8	8.64	4.70	15.3	8.45	4.99	14.8	8.27	5.29	14.2	8.08	5.61	13.7	7.89	5.95	13.1	7.69	6.31	12.5	7.50	6.69
	20	14.9	10.5	4.60	14.4	10.3	4.88	13.9	10.2	5.18	13.4	9.96	5.49	12.9	9.75	5.83	12.3	9.55	6.18	11.8	9.35	6.54
	18	14.1	12.3	4.51	13.6	12.0	4.79	13.2	11.8	5.08	12.7	11.5	5.40	12.3	11.1	5.74	11.8	10.8	6.09	11.3	10.5	6.45
	16	13.6	13.4	4.45	13.2	13.1	4.73	12.8	12.8	5.03	12.4	12.4	5.34	11.9	11.9	5.68	11.5	11.5	6.04	11.1	11.1	6.40
14	13.5	13.5	4.45	13.1	13.1	4.73	12.8	12.8	5.03	12.4	12.4	5.34	11.9	11.9	5.68	11.5	11.5	6.04	11.1	11.1	6.40	

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	048	1.00	1.00	FG3ASA	048	0.98	1.00
	060	1.03	1.01		060	1.00	1.01

<b>38YCC060-95 Outdoor Section With F(A,B)4AS(F,B)060 Indoor Section</b>																						
850	22	19.1	9.97	5.49	18.5	9.74	5.88	17.9	9.52	6.30	17.2	9.28	6.76	16.5	9.05	7.25	15.8	8.80	7.78	15.1	8.55	8.33
	20	18.0	12.0	5.35	17.4	11.7	5.73	16.8	11.5	6.15	16.2	11.3	6.60	15.5	11.0	7.09	14.9	10.8	7.60	14.2	10.5	8.15
	18	16.9	13.9	5.22	16.4	13.7	5.60	15.8	13.4	6.02	15.2	13.2	6.46	14.7	12.9	6.95	14.1	12.5	7.47	13.5	12.1	8.01
	16	16.1	15.4	5.13	15.6	15.1	5.51	15.2	14.8	5.93	14.6	14.4	6.37	14.1	14.0	6.86	13.6	13.6	7.38	13.0	13.0	7.93
14	15.9	15.9	5.10	15.5	15.4	5.49	15.0	15.0	5.91	14.6	14.6	6.36	14.1	14.1	6.86	13.6	13.6	7.38	13.1	13.1	7.93	
900	22	19.2	10.2	5.55	18.6	9.94	5.94	17.9	9.71	6.36	17.3	9.48	6.82	16.6	9.25	7.31	15.9	9.00	7.84	15.2	8.76	8.39
	20	18.1	12.3	5.41	17.5	12.0	5.79	16.9	11.8	6.21	16.2	11.6	6.66	15.6	11.3	7.15	14.9	11.1	7.66	14.3	10.8	8.21
	18	17.0	14.3	5.28	16.5	14.1	5.66	15.9	13.8	6.08	15.4	13.5	6.52	14.8	13.1	7.01	14.2	12.8	7.53	13.6	12.3	8.08
	16	16.3	15.8	5.19	15.8	15.5	5.58	15.3	15.1	5.99	14.8	14.7	6.44	14.3	14.3	6.93	13.8	13.8	7.46	13.2	13.2	8.01
14	16.1	16.1	5.17	15.7	15.7	5.56	15.2	15.2	5.98	14.8	14.8	6.44	14.3	14.3	6.94	13.8	13.8	7.46	13.2	13.2	8.01	
950	22	19.3	10.4	5.61	18.7	10.1	6.00	18.1	9.92	6.42	17.4	9.68	6.88	16.7	9.45	7.37	16.0	9.20	7.90	15.2	8.95	8.45
	20	18.2	12.6	5.46	17.6	12.3	5.85	17.0	12.1	6.26	16.3	11.9	6.71	15.7	11.6	7.20	15.0	11.4	7.72	14.3	11.1	8.26
	18	17.1	14.7	5.33	16.6	14.4	5.72	16.0	14.1	6.13	15.5	13.8	6.58	14.9	13.4	7.08	14.3	13.0	7.60	13.7	12.6	8.15
	16	16.5	16.1	5.25	16.0	15.8	5.64	15.5	15.4	6.06	15.0	15.0	6.51	14.5	14.5	7.01	13.9	13.9	7.53	13.4	13.4	8.09
14	16.3	16.3	5.24	15.9	15.9	5.63	15.4	15.4	6.05	15.0	15.0	6.51	14.5	14.5	7.01	13.9	13.9	7.53	13.4	13.4	8.09	
1000	22	19.4	10.6	5.66	18.8	10.3	6.06	18.1	10.1	6.47	17.4	9.87	6.93	16.7	9.64	7.43	16.0	9.39	7.95	15.3	9.14	8.50
	20	18.3	12.9	5.51	17.6	12.6	5.90	17.0	12.4	6.32	16.4	12.2	6.77	15.7	11.9	7.26	15.1	11.7	7.77	14.3	11.4	8.32
	18	17.3	15.0	5.39	16.7	14.7	5.78	16.2	14.4	6.19	15.6	14.0	6.65	15.0	13.6	7.14	14.4	13.2	7.66	13.8	12.8	8.21
	16	16.6	16.4	5.31	16.1	16.0	5.70	15.6	15.6	6.12	15.1	15.1	6.58	14.6	14.6	7.08	14.1	14.1	7.60	13.5	13.5	8.16
14	16.6	16.5	5.31	16.1	16.1	5.70	15.6	15.6	6.12	15.1	15.1	6.58	14.6	14.6	7.08	14.1	14.1	7.60	13.5	13.5	8.16	

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	060	1.00	1.00	FG3ASA	060	0.99	1.00
FB4ASB	070	1.02	1.02		—	—	—

\* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation and connected by 4.55m of tubing. If other than 4.55m of tubing is used and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 27°C entering air at the indoor coil. For sensible capacities at other than 27°C, deduct 245 kw per 480 L/S of indoor coil air for each degree below 27°C, or add 245 kw per 480 L/S of indoor coil air per degree above 27°C.

\*\* System kw is total of indoor and outdoor unit kilowatts.

EWB — Entering Wet Bulb

L/S — Liters per second

# Detailed cooling capacities\* (English)

COIL AIR		CONDENSER ENTERING AIR TEMPERATURES °F																	
		75			85			95			105			115			125		
		CFM	(F) EWB	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	
Total	Sens‡			Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		
<b>38YCC024-74 Outdoor Section With F(A,B)4ASF024 Indoor Section</b>																			
700	72	27.9	13.5	2.43	26.4	12.9	2.60	24.8	12.3	2.76	23.3	11.7	2.92	21.7	11.2	3.08	20.0	10.6	3.22
	67	25.4	16.7	2.35	24.0	16.1	2.51	22.6	15.5	2.66	21.1	14.9	2.81	19.6	14.3	2.95	18.1	13.7	3.08
	62	23.1	19.9	2.27	21.8	19.3	2.42	20.5	18.7	2.56	19.2	18.0	2.70	17.8	17.3	2.84	16.5	16.5	2.97
	57	21.9	21.9	2.22	20.8	20.8	2.38	19.8	19.8	2.53	18.7	18.7	2.68	17.6	17.6	2.83	16.5	16.5	2.97
800	72	28.5	14.1	2.49	26.9	13.5	2.66	25.3	12.9	2.83	23.6	12.3	2.98	22.0	11.7	3.14	20.3	11.1	3.28
	67	26.0	17.7	2.40	24.5	17.1	2.56	23.0	16.5	2.72	21.5	15.9	2.87	19.9	15.3	3.01	18.3	14.7	3.15
	62	23.7	21.3	2.32	22.3	20.6	2.48	21.0	19.9	2.63	19.6	19.2	2.77	18.3	18.3	2.91	17.1	17.1	3.05
	57	22.8	22.8	2.29	21.7	21.7	2.45	20.6	20.6	2.61	19.5	19.5	2.76	18.3	18.3	2.91	17.1	17.1	3.06
900	72	29.0	14.6	2.54	27.3	14.0	2.71	25.7	13.4	2.88	23.9	12.8	3.04	22.2	12.3	3.19	20.5	11.7	3.34
	67	26.4	18.7	2.46	24.9	18.1	2.62	23.4	17.5	2.77	21.8	16.8	2.93	20.2	16.2	3.07	18.6	15.6	3.20
	62	24.2	22.6	2.38	22.8	21.9	2.53	21.4	21.1	2.68	20.1	20.1	2.83	18.9	18.9	2.99	17.6	17.6	3.13
	57	23.6	23.6	2.36	22.5	22.5	2.52	21.3	21.3	2.68	20.1	20.1	2.83	18.9	18.9	2.99	17.6	17.6	3.13

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	024	1.00	1.00	FG3ASA	024	0.97	1.02
	030	1.02	1.00		—	—	—

## 38YCC036-74, 94 Outdoor Section With F(A,B)4ASF036 Indoor Section

1050	72	42.5	20.8	3.43	40.2	19.9	3.67	37.9	19.1	3.91	35.6	18.2	4.14	33.2	17.4	4.36	30.7	16.5	4.57
	67	38.6	25.9	3.31	36.5	25.1	3.54	34.3	24.2	3.76	32.1	23.3	3.98	29.9	22.4	4.18	27.6	21.5	4.38
	62	35.0	31.0	3.20	33.1	30.0	3.42	31.2	29.1	3.63	29.2	28.1	3.83	27.3	27.0	4.04	25.4	25.4	4.24
	57	33.5	33.5	3.15	31.9	31.9	3.37	30.4	30.4	3.60	28.8	28.8	3.81	27.1	27.1	4.03	25.4	25.4	4.24
1200	72	43.4	21.7	3.52	41.1	20.9	3.76	38.6	20.0	4.00	36.2	19.1	4.23	33.7	18.3	4.45	31.1	17.4	4.67
	67	39.4	27.6	3.39	37.2	26.7	3.62	35.0	25.8	3.85	32.6	24.9	4.07	30.3	23.9	4.27	28.0	23.0	4.47
	62	35.9	33.1	3.28	33.9	32.1	3.51	31.9	31.0	3.72	30.0	29.8	3.93	28.1	28.1	4.15	26.3	26.3	4.36
	57	34.9	34.9	3.25	33.2	33.2	3.48	31.6	31.6	3.71	29.9	29.9	3.93	28.1	28.1	4.15	26.3	26.3	4.36
1350	72	44.1	22.6	3.60	41.7	21.8	3.84	39.2	20.9	4.08	36.7	20.0	4.31	34.0	19.2	4.54	31.4	18.3	4.75
	67	40.1	29.1	3.47	37.8	28.2	3.70	35.4	27.3	3.93	33.1	26.4	4.15	30.7	25.4	4.36	28.4	24.5	4.56
	62	36.6	35.1	3.37	34.6	33.9	3.59	32.6	32.6	3.81	30.8	30.8	4.04	29.0	29.0	4.26	27.1	27.1	4.48
	57	36.0	36.0	3.35	34.3	34.3	3.58	32.6	32.6	3.81	30.8	30.8	4.04	29.0	29.0	4.26	27.1	27.1	4.48

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	036	1.00	1.00	FG3ASA	036	0.98	1.00
F(A,B)4AS(F,B)	042	1.02	0.99				

See notes on pg. 16.

# Detailed cooling capacities\* (English) continued

COIL AIR		CONDENSER ENTERING AIR TEMPERATURES °F																	
		75			85			95			105			115			125		
		Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**	Capacity MBtu/h†		Sys. Power Kw**
CFM	(F) EWB	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**	Total	Sens‡	Kw**
		<b>38YCC048-95 Outdoor Section With F(A,B)4AS(F,B)048 Indoor Section</b>																	
1400	72	54.5	27.0	4.24	52.3	26.2	4.62	49.9	25.3	5.04	47.5	24.4	5.48	44.9	23.5	5.96	42.4	22.7	6.48
	67	50.1	34.3	4.12	48.0	33.4	4.49	45.8	32.5	4.88	43.6	31.6	5.31	41.2	30.7	5.78	38.8	29.8	6.27
	62	46.0	41.3	4.00	44.1	40.4	4.36	42.1	39.4	4.75	40.1	38.4	5.17	38.0	37.3	5.61	35.7	35.7	6.08
	57	44.4	44.4	3.96	42.8	42.8	4.32	41.2	41.2	4.71	39.5	39.5	5.15	37.8	37.8	5.60	35.8	35.8	6.08
1600	72	55.4	28.2	4.34	53.1	27.4	4.72	50.6	26.5	5.13	48.1	25.6	5.58	45.4	24.7	6.06	42.8	23.8	6.58
	67	51.0	36.3	4.21	48.8	35.5	4.58	46.5	34.6	4.98	44.1	33.7	5.41	41.7	32.7	5.88	39.3	31.8	6.37
	62	46.9	44.1	4.10	45.0	43.1	4.46	43.0	42.0	4.85	41.0	40.7	5.27	39.0	39.0	5.74	37.0	37.0	6.23
	57	46.0	46.0	4.07	44.4	44.4	4.44	42.6	42.6	4.84	40.9	40.9	5.27	39.0	39.0	5.74	37.0	37.0	6.23
1800	72	56.1	29.4	4.43	53.7	28.5	4.81	51.2	27.6	5.22	48.6	26.8	5.67	45.9	25.8	6.15	43.1	24.9	6.67
	67	51.6	38.4	4.30	49.4	37.5	4.67	47.1	36.6	5.07	44.6	35.6	5.50	42.1	34.7	5.97	39.7	33.7	6.47
	62	47.8	46.6	4.19	45.8	45.4	4.55	43.9	43.9	4.95	41.9	41.9	5.39	40.0	40.0	5.86	38.0	38.0	6.37
	57	47.4	47.4	4.18	45.7	45.7	4.55	43.8	43.8	4.95	42.0	42.0	5.39	40.0	40.0	5.86	38.0	38.0	6.37

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	048	1.00	1.00	FG3ASA	048	0.98	1.00
	060	1.03	1.01		060	1.00	1.01

## 38YCC060-95 Outdoor Section With F(A,B)4AS(F,B)060 Indoor Section

1750	72	67.5	33.7	5.11	64.7	32.7	5.61	61.8	31.6	6.18	58.6	30.5	6.81	55.5	29.4	7.51	52.0	28.2	8.27
	67	61.9	43.0	4.91	59.3	41.9	5.41	56.5	40.8	5.97	53.7	39.7	6.59	50.8	38.6	7.27	47.6	37.3	8.02
	62	56.8	52.0	4.74	54.5	50.9	5.24	52.0	49.6	5.79	49.5	48.3	6.41	47.0	46.8	7.09	44.4	44.4	7.84
	57	55.2	55.2	4.69	53.3	53.3	5.20	51.3	51.3	5.76	49.1	49.1	6.39	46.9	46.9	7.09	44.4	44.4	7.84
1900	72	68.1	34.6	5.19	65.2	33.6	5.70	62.1	32.5	6.26	59.0	31.4	6.89	55.8	30.3	7.59	52.3	29.1	8.36
	67	62.5	44.6	4.99	59.8	43.5	5.49	57.0	42.4	6.05	54.1	41.3	6.67	51.2	40.1	7.36	47.9	38.9	8.11
	62	57.6	54.2	4.83	55.2	53.0	5.32	52.8	51.7	5.88	50.2	50.1	6.50	47.9	47.9	7.19	45.2	45.2	7.96
	57	56.4	56.4	4.79	54.5	54.5	5.30	52.3	52.3	5.87	50.1	50.1	6.50	47.8	47.8	7.20	45.3	45.3	7.96
2000	72	68.6	35.2	5.24	65.6	34.2	5.75	62.6	33.1	6.32	59.3	32.0	6.95	56.0	30.9	7.65	52.5	29.7	8.41
	67	62.8	45.7	5.04	60.1	44.6	5.54	57.3	43.5	6.10	54.4	42.4	6.72	51.3	41.1	7.41	48.0	39.9	8.16
	62	58.0	55.6	4.88	55.6	54.3	5.38	53.1	52.8	5.93	50.8	50.8	6.56	48.4	48.4	7.26	45.7	45.7	8.03
	57	57.2	57.2	4.86	55.1	55.1	5.36	53.0	53.0	5.93	50.7	50.7	6.57	48.4	48.4	7.26	45.7	45.7	8.03
2150	72	69.0	36.1	5.32	66.0	35.1	5.83	62.9	34.0	6.39	59.6	32.9	7.03	56.2	31.8	7.73	52.7	30.6	8.49
	67	63.3	47.2	5.12	60.5	46.1	5.62	57.7	45.0	6.18	54.7	43.9	6.80	51.6	42.7	7.49	48.3	41.4	8.24
	62	58.7	57.5	4.96	56.2	55.9	5.46	53.9	53.9	6.03	51.6	51.6	6.66	49.1	49.1	7.36	46.5	46.5	8.13
	57	58.2	58.2	4.95	56.1	56.1	5.46	53.9	53.9	6.03	51.5	51.5	6.66	49.1	49.1	7.36	46.5	46.5	8.13

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Cooling		Indoor Section	Size	Cooling	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	060	1.00	1.00	FG3ASA	060	0.99	1.00
FB4ASB	070	1.02	1.02		—	—	—

\* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation and connected by 25 ft of tubing. If other than 25 ft of tubing is used and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 80°F entering air at the indoor coil. For sensible capacities at other than 80°F, deduct 835 Btu/h per 1000 CFM of indoor coil air for each degree below 80°F, or add 835 Btu/h per 1000 CFM of indoor coil air per degree above 80°F.

\*\* System kw is total of indoor and outdoor unit kilowatts.

EWB — Entering Wet Bulb

# Heat pump heating performance (S.I.)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °C																							
		-16			-8			0			4			8			12			16			20		
		Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power
(C) EDB	L/S	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*
<b>38YCC024-74 Outdoor Section With F(A,B)4ASF024 Indoor Section</b>																									
12	340	3.39	3.12	1.39	4.44	4.04	1.63	5.64	5.08	1.90	6.32	5.90	2.05	7.04	7.01	2.22	7.87	7.87	2.42	8.75	8.75	2.64	9.67	9.67	2.88
	380	3.44	3.17	1.41	4.51	4.10	1.65	5.73	5.16	1.91	6.42	5.99	2.06	7.15	7.11	2.22	7.98	7.98	2.42	8.88	8.88	2.64	9.82	9.82	2.88
	420	3.49	3.21	1.43	4.56	4.15	1.66	5.80	5.21	1.92	6.49	6.05	2.07	7.22	7.18	2.23	8.06	8.06	2.43	8.97	8.97	2.65	9.93	9.93	2.89
15	340	3.28	3.01	1.41	4.33	3.94	1.66	5.51	4.96	1.94	6.18	5.76	2.10	6.89	6.86	2.27	7.70	7.70	2.47	8.57	8.57	2.70	9.48	9.48	2.95
	380	3.33	3.06	1.43	4.39	4.00	1.68	5.60	5.04	1.95	6.28	5.85	2.11	6.99	6.96	2.28	7.82	7.82	2.48	8.70	8.70	2.70	9.63	9.63	2.95
	420	3.37	3.10	1.45	4.45	4.05	1.69	5.66	5.09	1.96	6.34	5.91	2.12	7.07	7.03	2.28	7.90	7.90	2.48	8.79	8.79	2.71	9.63	9.63	2.95
18	340	3.16	2.91	1.43	4.21	3.83	1.69	5.38	4.84	1.98	6.04	5.63	2.14	6.74	6.71	2.32	7.54	7.54	2.53	8.39	8.39	2.76	9.28	9.28	3.01
	380	3.21	2.95	1.45	4.27	3.89	1.71	5.46	4.92	1.99	6.13	5.71	2.15	6.84	6.81	2.33	7.65	7.65	2.54	8.52	8.52	2.77	9.43	9.43	3.01
	420	3.26	3.00	1.47	4.33	3.94	1.72	5.53	4.97	2.01	6.20	5.78	2.17	6.92	6.89	2.34	7.74	7.74	2.54	8.61	8.61	2.77	9.54	9.54	3.02
21	340	3.05	2.80	1.44	4.10	3.73	1.72	5.25	4.73	2.02	5.89	5.49	2.19	6.59	6.56	2.37	7.37	7.37	2.59	8.21	8.21	2.83	9.08	9.08	3.08
	380	3.10	2.85	1.47	4.16	3.78	1.74	5.33	4.80	2.03	5.98	5.58	2.20	6.69	6.66	2.38	7.49	7.49	2.59	8.34	8.34	2.83	9.23	9.23	3.08
	420	3.14	2.89	1.49	4.21	3.83	1.75	5.39	4.85	2.05	6.06	5.65	2.21	6.77	6.74	2.39	7.58	7.58	2.60	8.44	8.44	2.83	9.35	9.35	3.09
24	340	2.92	2.69	1.46	3.98	3.63	1.75	5.12	4.61	2.06	5.75	5.36	2.23	6.43	6.40	2.42	7.20	7.20	2.64	8.02	8.02	2.89	8.88	8.88	3.14
	380	2.98	2.74	1.48	4.04	3.68	1.76	5.19	4.68	2.07	5.84	5.44	2.25	6.53	6.50	2.43	7.32	7.32	2.65	8.15	8.15	2.89	9.03	9.03	3.14
	420	3.02	2.78	1.50	4.10	3.73	1.78	5.26	4.73	2.09	5.91	5.51	2.26	6.61	6.58	2.44	7.41	7.41	2.66	8.26	8.26	2.89	9.14	9.14	3.15

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	024	1.00	1.00	FG3ASA	024	0.99	1.05
	030	1.00	0.99		—	—	—

## 38YCC036-74, 94 Outdoor Section With F(A,B)4ASF036 Indoor Section

2	500	5.42	4.98	2.22	7.03	6.40	2.49	8.86	7.98	2.78	9.93	9.26	2.95	11.1	11.0	3.14	12.3	12.3	3.36	13.7	13.7	3.61	15.1	15.1	3.88
	560	5.49	5.05	2.26	7.13	6.49	2.52	9.00	8.10	2.80	10.1	9.40	2.97	11.2	11.2	3.14	12.5	12.5	3.36	13.9	13.9	3.60	15.3	15.3	3.87
	640	5.60	5.15	2.31	7.26	6.60	2.56	9.15	8.23	2.83	10.2	9.54	2.99	11.4	11.4	3.16	12.7	12.7	3.37	14.1	14.1	3.62	15.6	15.6	3.88
15	500	5.22	4.80	2.25	6.84	6.22	2.54	8.65	7.79	2.84	9.70	9.04	3.02	10.8	10.8	3.21	12.1	12.1	3.44	13.4	13.4	3.69	14.8	14.8	3.97
	560	5.30	4.87	2.28	6.94	6.32	2.57	8.78	7.90	2.86	9.84	9.17	3.04	11.0	10.9	3.22	12.2	12.2	3.44	13.6	13.6	3.69	15.0	15.0	3.96
	640	5.41	4.97	2.34	7.06	6.43	2.61	8.93	8.03	2.90	10.0	9.32	3.06	11.1	11.1	3.24	12.4	12.4	3.46	13.8	13.8	3.70	15.2	15.2	3.97
18	500	5.02	4.62	2.27	6.65	6.05	2.58	8.44	7.60	2.91	9.46	8.82	3.09	10.6	10.5	3.29	11.8	11.8	3.52	13.1	13.1	3.78	14.4	14.4	4.06
	560	5.11	4.69	2.31	6.75	6.14	2.61	8.57	7.71	2.93	9.60	8.95	3.11	10.7	10.7	3.30	12.0	12.0	3.52	13.3	13.3	3.78	14.7	14.7	4.05
	640	5.21	4.79	2.37	6.87	6.25	2.66	8.71	7.84	2.96	9.76	9.10	3.13	10.9	10.8	3.32	12.2	12.2	3.54	13.5	13.5	3.79	14.9	14.9	4.06
21	500	4.83	4.44	2.30	6.46	5.88	2.63	8.23	7.40	2.97	9.22	8.60	3.16	10.3	10.2	3.36	11.5	11.5	3.60	12.8	12.8	3.86	14.1	14.1	4.14
	560	4.91	4.52	2.34	6.56	5.97	2.66	8.35	7.52	2.99	9.37	8.73	3.18	10.5	10.4	3.38	11.7	11.7	3.61	13.0	13.0	3.86	14.3	14.3	4.14
	640	5.02	4.61	2.40	6.68	6.08	2.71	8.49	7.64	3.03	9.53	8.88	3.21	10.6	10.6	3.40	11.9	11.9	3.62	13.2	13.2	3.88	14.6	14.6	4.15
24	500	4.61	4.24	2.33	6.26	5.70	2.67	8.01	7.21	3.03	8.99	8.38	3.22	10.0	9.99	3.44	11.2	11.2	3.68	12.4	12.4	3.95	13.7	13.7	4.23
	560	4.70	4.32	2.37	6.36	5.79	2.70	8.14	7.32	3.05	9.13	8.51	3.24	10.2	10.1	3.45	11.4	11.4	3.69	12.7	12.7	3.95	14.0	14.0	4.23
	640	4.81	4.42	2.42	6.48	5.90	2.75	8.28	7.45	3.09	9.29	8.66	3.28	10.4	10.3	3.48	11.6	11.6	3.71	12.9	12.9	3.96	14.2	14.2	4.24

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	036	1.00	1.00	FG3ASA	036	0.99	1.01
F(A,B)4AS(F,B)	042	1.00	0.97		—	—	—

See notes on pg. 18.



# Heat pump heating performance (S.I.) continued

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °C																							
		-16			-8			0			4			8			12			16			20		
		Capacity Kw	Total Power		Capacity Kw	Total Power		Capacity Kw	Total Power		Capacity Kw	Total Power		Capacity Kw	Total Power		Capacity Kw	Total Power		Capacity Kw	Total Power		Capacity Kw	Total Power	
(C) EDB	L/S	Total	Integr†	Kw*	Total	Integr†	Kw*	Total	Integr†	Kw*	Total	Integr†	Kw*	Total	Integr†	Kw*	Total	Integr†	Kw*	Total	Integr†	Kw*	Total	Integr†	Kw*
<b>38YCC048-95 Outdoor Section With F(A,B)4AS(F,B)048 Indoor Section</b>																									
12	650	6.41	5.89	3.05	8.38	7.63	3.25	10.9	9.79	3.48	12.3	11.5	3.61	13.9	13.8	3.75	15.8	15.8	3.92	17.8	17.8	4.12	20.1	20.1	4.34
	750	6.48	5.96	3.08	8.49	7.72	3.27	11.0	9.92	3.49	12.4	11.6	3.60	13.9	13.9	3.72	15.9	15.9	3.89	18.1	18.1	4.08	20.4	20.4	4.30
	850	6.56	6.03	3.13	8.58	7.81	3.31	11.1	9.99	3.50	12.5	11.7	3.61	14.2	14.2	3.74	16.1	16.1	3.88	18.2	18.2	4.05	20.4	20.4	4.25
15	650	6.35	5.84	3.19	8.33	7.58	3.40	10.8	9.71	3.64	12.2	11.4	3.78	13.8	13.7	3.93	15.6	15.6	4.11	17.7	17.7	4.32	19.9	19.9	4.55
	750	6.43	5.91	3.23	8.42	7.67	3.42	10.9	9.82	3.64	12.3	11.5	3.77	13.8	13.8	3.89	15.8	15.8	4.07	17.9	17.9	4.27	20.1	20.1	4.49
	850	6.50	5.98	3.27	8.52	7.75	3.45	11.0	9.90	3.66	12.4	11.6	3.77	14.1	14.0	3.91	15.9	15.9	4.06	18.0	18.0	4.24	20.2	20.2	4.45
18	650	6.29	5.79	3.34	8.27	7.52	3.55	10.7	9.62	3.80	12.1	11.3	3.95	13.6	13.6	4.10	15.5	15.5	4.30	17.5	17.5	4.52	19.7	19.7	4.76
	750	6.37	5.86	3.37	8.36	7.61	3.57	10.8	9.72	3.80	12.2	11.4	3.93	13.7	13.7	4.07	15.6	15.6	4.25	17.7	17.7	4.46	19.9	19.9	4.69
	850	6.44	5.92	3.41	8.45	7.69	3.60	10.9	9.81	3.81	12.3	11.5	3.94	13.9	13.8	4.07	15.8	15.8	4.24	17.8	17.8	4.43	20.0	20.0	4.65
21	650	6.24	5.73	3.48	8.21	7.47	3.70	10.6	9.54	3.96	12.0	11.2	4.11	13.5	13.4	4.28	15.3	15.3	4.48	17.3	17.3	4.72	19.4	19.4	4.96
	750	6.31	5.80	3.51	8.30	7.55	3.71	10.7	9.63	3.96	12.1	11.3	4.09	13.6	13.6	4.25	15.5	15.5	4.44	17.5	17.5	4.65	19.6	19.6	4.88
	850	6.39	5.87	3.54	8.39	7.63	3.74	10.8	9.72	3.97	12.2	11.4	4.10	13.7	13.7	4.24	15.6	15.6	4.42	17.7	17.7	4.62	19.8	19.8	4.84
24	650	6.20	5.70	3.64	8.18	7.44	3.86	10.5	9.46	4.13	11.9	11.1	4.29	13.4	13.3	4.46	15.1	15.1	4.67	17.1	17.1	4.91	19.2	19.2	5.18
	750	6.27	5.76	3.66	8.25	7.51	3.87	10.6	9.55	4.12	12.0	11.2	4.27	13.5	13.4	4.43	15.3	15.3	4.63	17.3	17.3	4.85	19.4	19.4	5.09
	850	6.34	5.83	3.70	8.31	7.57	3.89	10.7	9.63	4.13	12.1	11.3	4.27	13.6	13.6	4.42	15.5	15.5	4.61	17.5	17.5	4.82	19.6	19.6	5.05

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	048	1.00	1.00	FG3ASA	048	1.00	1.03
	060	0.99	0.96		060	1.00	1.02

<b>38YCC060-95 Outdoor Section With F(A,B)4AS(F,B)060 Indoor Section</b>																									
12	850	9.46	8.70	3.51	11.7	10.6	3.72	14.3	12.8	4.00	15.7	14.7	4.17	17.4	17.3	4.37	19.4	19.4	4.65	21.6	21.6	4.98	24.0	24.0	5.34
	900	9.50	8.73	3.53	11.7	10.7	3.73	14.3	12.9	4.00	15.8	14.7	4.17	17.4	17.3	4.36	19.4	19.4	4.64	21.8	21.8	4.97	24.3	24.3	5.33
	950	9.54	8.77	3.55	11.7	10.7	3.74	14.4	12.9	4.01	15.9	14.8	4.18	17.5	17.4	4.37	19.5	19.5	4.64	21.7	21.7	4.96	24.0	24.0	5.32
15	850	9.42	8.66	3.73	11.6	10.6	3.96	14.2	12.8	4.25	15.7	14.6	4.43	17.3	17.2	4.64	19.2	19.2	4.93	21.4	21.4	5.26	23.7	23.7	5.63
	900	9.46	8.70	3.75	11.7	10.6	3.97	14.3	12.8	4.25	15.7	14.7	4.43	17.3	17.3	4.63	19.3	19.3	4.91	21.5	21.5	5.24	23.9	23.9	5.61
	950	9.51	8.74	3.77	11.7	10.6	3.98	14.3	12.9	4.26	15.8	14.7	4.43	17.4	17.3	4.64	19.4	19.4	4.91	21.5	21.5	5.23	23.7	23.7	5.60
18	850	9.38	8.63	3.95	11.6	10.7	4.00	14.4	12.9	4.27	15.9	14.8	4.44	17.5	17.4	4.64	19.4	19.4	4.91	21.6	21.6	5.23	23.8	23.8	5.60
	900	9.43	8.67	3.97	11.6	10.6	4.20	14.2	12.8	4.50	15.6	14.6	4.69	17.3	17.2	4.90	19.2	19.2	5.18	21.3	21.3	5.52	23.6	23.6	5.89
	950	9.47	8.70	3.99	11.6	10.6	4.21	14.2	12.8	4.51	15.7	14.6	4.69	17.3	17.2	4.90	19.2	19.2	5.18	21.3	21.3	5.51	23.5	23.5	5.88
21	850	9.34	8.59	4.17	11.5	10.5	4.44	14.1	12.7	4.76	15.5	14.4	4.96	17.1	17.0	5.19	18.9	18.9	5.48	21.0	21.0	5.82	23.1	23.1	6.20
	900	9.39	8.63	4.19	11.6	10.5	4.44	14.1	12.7	4.76	15.6	14.5	4.95	17.2	17.1	5.17	19.0	19.0	5.46	21.0	21.0	5.79	23.2	23.2	6.17
	950	9.43	8.67	4.21	11.6	10.6	4.45	14.2	12.8	4.76	15.6	14.6	4.94	17.2	17.2	5.16	19.1	19.1	5.45	21.1	21.1	5.78	23.3	23.3	6.15
24	850	9.29	8.54	4.40	11.5	10.5	4.69	14.0	12.6	5.03	15.4	14.4	5.23	16.9	16.9	5.46	18.8	18.8	5.77	20.8	20.8	6.12	22.9	22.9	6.52
	900	9.34	8.59	4.42	11.5	10.5	4.69	14.1	12.6	5.02	15.5	14.4	5.21	17.0	16.9	5.44	18.9	18.9	5.74	20.9	20.9	6.09	23.0	23.0	6.48
	950	9.38	8.62	4.43	11.6	10.5	4.70	14.1	12.7	5.02	15.5	14.5	5.21	17.1	17.0	5.43	18.9	18.9	5.72	21.0	21.0	6.07	23.1	23.1	6.45
1000	9.43	8.67	4.45	11.6	10.6	4.71	14.2	12.7	5.02	15.6	14.5	5.21	17.1	17.1	5.43	19.0	19.0	5.72	21.0	21.0	6.06	23.2	23.2	6.44	

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	060	1.00	1.00	FG3ASA	060	0.99	1.03
FB4ASB	070	0.99	0.95		—	—	—

\* 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 system kilowatts.

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

EDB — Entering Dry Bulb

# Heat pump heating performance (English)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F																										
		-3			7			17			27			37			47			57			67					
		Capacity Kw		Total Power Kw*	Capacity Kw		Total Power Kw*	Capacity Kw		Total Power Kw*	Capacity Kw		Total Power Kw*	Capacity Kw		Total Power Kw*	Capacity Kw		Total Power Kw*	Capacity Kw		Total Power Kw*	Capacity Kw		Total Power Kw*			
(F)	EDB	CFM	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*		
<b>38YCC024-74 Outdoor Section With F(A,B)4ASF024 Indoor Section</b>																												
65	700	9.25	8.51	1.32	11.6	10.7	1.49	14.1	12.9	1.68	16.7	14.9	1.87	19.7	18.0	2.09	23.0	23.0	2.34	26.8	26.8	2.64	31.0	31.0	2.99	31.6	31.6	2.99
	800	9.45	8.69	1.34	11.8	10.9	1.51	14.4	13.1	1.70	17.0	15.1	1.89	20.1	18.3	2.10	23.5	23.5	2.35	27.3	27.3	2.64	31.6	31.6	2.99	31.6	31.6	2.99
	900	9.62	8.85	1.37	12.0	11.0	1.54	14.6	13.3	1.72	17.3	15.4	1.91	20.4	18.5	2.12	23.8	23.8	2.36	27.7	27.7	2.65	32.1	32.1	2.99	32.1	32.1	2.99
70	700	8.87	8.16	1.33	11.2	10.3	1.51	13.8	12.5	1.70	16.4	14.5	1.91	19.3	17.6	2.13	22.6	22.6	2.39	26.3	26.3	2.69	30.4	30.4	3.05	31.0	31.0	3.05
	800	9.07	8.35	1.35	11.5	10.5	1.53	14.0	12.8	1.72	16.7	14.8	1.92	19.6	17.9	2.14	23.0	23.0	2.40	26.8	26.8	2.70	31.0	31.0	3.05	31.0	31.0	3.05
	900	9.25	8.51	1.38	11.6	10.7	1.56	14.2	13.0	1.75	16.9	15.0	1.94	19.9	18.1	2.16	23.3	23.3	2.41	27.2	27.2	2.70	31.5	31.5	3.05	31.5	31.5	3.05
75	700	8.45	7.77	1.34	10.9	9.99	1.52	13.4	12.2	1.73	16.0	14.2	1.94	18.9	17.2	2.17	22.1	22.1	2.44	25.8	25.8	2.75	29.8	29.8	3.11	30.4	30.4	3.10
	800	8.66	7.96	1.36	11.1	10.2	1.55	13.6	12.4	1.75	16.3	14.4	1.96	19.2	17.5	2.19	22.5	22.5	2.44	26.3	26.3	2.75	30.4	30.4	3.10	30.4	30.4	3.10
	900	8.84	8.14	1.39	11.3	10.4	1.57	13.8	12.6	1.77	16.5	14.6	1.98	19.5	17.7	2.20	22.8	22.8	2.46	26.6	26.6	2.76	30.8	30.8	3.11	30.8	30.8	3.11

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	024	1.00	1.00	FG3ASA	024	0.99	1.05
	030	1.00	0.99		—	—	—

## 38YCC036-74, 94 Outdoor Section With F(A,B)4AS(F,B)036 Indoor Section

65	1050	14.7	13.6	2.15	18.5	17.0	2.35	22.3	20.4	2.57	26.3	23.4	2.79	31.0	28.2	3.03	36.2	36.2	3.31	42.0	42.0	3.64	48.4	48.4	4.03
	1200	15.1	13.9	2.19	18.8	17.3	2.40	22.7	20.7	2.61	26.8	23.8	2.82	31.6	28.7	3.06	36.8	36.8	3.32	42.8	42.8	3.64	49.3	49.3	4.02
	1350	15.4	14.2	2.24	19.1	17.6	2.44	23.1	21.1	2.65	27.2	24.2	2.85	32.0	29.1	3.08	37.3	37.3	3.34	43.4	43.4	3.66	50.0	50.0	4.03
70	1050	14.0	12.9	2.16	17.9	16.4	2.38	21.7	19.8	2.61	25.7	22.8	2.84	30.3	27.6	3.10	35.3	35.3	3.38	41.0	41.0	3.72	47.3	47.3	4.11
	1200	14.4	13.2	2.21	18.2	16.7	2.43	22.1	20.2	2.65	26.2	23.2	2.87	30.8	28.1	3.12	36.0	36.0	3.40	41.8	41.8	3.72	48.3	48.3	4.11
	1350	14.7	13.5	2.27	18.5	17.0	2.48	22.5	20.5	2.69	26.6	23.6	2.91	31.3	28.5	3.15	36.5	36.5	3.42	42.5	42.5	3.74	49.0	49.0	4.12
75	1050	13.3	12.2	2.18	17.2	15.8	2.41	21.1	19.3	2.65	25.1	22.3	2.89	29.6	26.9	3.16	34.5	34.5	3.45	40.1	40.1	3.79	46.3	46.3	4.19
	1200	13.7	12.6	2.23	17.6	16.2	2.45	21.5	19.6	2.69	25.6	22.7	2.92	30.1	27.4	3.18	35.2	35.2	3.47	40.9	40.9	3.80	47.2	47.2	4.19
	1350	14.0	12.8	2.28	17.9	16.5	2.50	21.9	20.0	2.73	25.9	23.0	2.96	30.6	27.8	3.21	35.7	35.7	3.49	41.5	41.5	3.81	47.9	47.9	4.20

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4ASF	036	1.00	1.00	FG3ASA	036	0.99	1.01
F(A,B)4AS(F,B)	042	1.00	0.97				

See notes on pg. 20.

# Heat pump heating performance (English) continued

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F																							
		-3			7			17			27			37			47			57			67		
		Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power	Capacity Kw		Total Power
(F) EDB	CFM	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*	Total	Integ†	Kw*
<b>38YCC048-95 Outdoor Section With F(A,B)4AS(F,B)048 Indoor Section</b>																									
65	1400	18.7	17.2	3.27	23.2	21.3	3.41	27.9	25.4	3.56	33.3	29.6	3.72	39.6	36.1	3.92	46.9	46.9	4.13	55.8	55.8	4.41	66.0	66.0	4.74
	1600	18.9	17.4	3.30	23.5	21.6	3.44	28.2	25.7	3.57	33.7	29.9	3.73	40.0	36.4	3.90	47.3	47.3	4.10	56.3	56.3	4.36	66.7	66.7	4.67
	1800	19.1	17.6	3.34	23.7	21.8	3.47	28.5	26.0	3.60	34.0	30.2	3.75	40.3	36.6	3.91	47.8	47.8	4.11	56.7	56.7	4.34	67.3	67.3	4.64
70	1400	18.5	17.1	3.41	23.0	21.1	3.54	27.7	25.3	3.70	33.1	29.4	3.87	39.3	35.7	4.07	46.4	46.4	4.29	55.3	55.3	4.59	65.3	65.3	4.93
	1600	18.8	17.3	3.43	23.3	21.4	3.56	28.0	25.5	3.71	33.4	29.7	3.87	39.6	36.0	4.05	47.0	47.0	4.27	55.7	55.7	4.53	65.9	65.9	4.85
	1800	19.0	17.4	3.47	23.5	21.6	3.60	28.3	25.8	3.74	33.7	30.0	3.89	39.9	36.3	4.06	47.3	47.3	4.26	56.3	56.3	4.51	66.7	66.7	4.82
75	1400	18.5	17.0	3.57	22.8	21.0	3.68	27.6	25.2	3.85	32.9	29.2	4.02	38.9	35.4	4.23	46.1	46.1	4.47	54.6	54.6	4.76	64.6	64.6	5.12
	1600	18.7	17.2	3.59	23.1	21.2	3.70	27.8	25.4	3.85	33.1	29.4	4.02	39.3	35.8	4.21	46.6	46.6	4.44	55.2	55.2	4.71	65.4	65.4	5.05
	1800	18.9	17.4	3.62	23.3	21.4	3.73	28.1	25.6	3.88	33.4	29.7	4.03	39.6	36.1	4.22	47.0	47.0	4.43	55.7	55.7	4.69	66.0	66.0	5.01

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	048	1.00	1.00	FG3ASA	048	1.00	1.03
	060	0.99	0.96		060	1.00	1.02

## 38YCC060-95 Outdoor Section With F(A,B)4AS(F,B)060 Indoor Section

65	1750	28.9	26.6	3.87	33.8	31.1	4.03	39.0	35.5	4.21	44.9	39.8	4.41	51.4	46.7	4.66	58.9	58.9	4.97	68.0	68.0	5.38	78.3	78.3	5.91
	1900	29.1	26.8	3.90	34.0	31.2	4.05	39.2	35.8	4.22	45.1	40.1	4.41	51.7	47.0	4.65	59.3	59.3	4.95	68.4	68.4	5.35	79.2	79.2	5.87
	2000	29.2	26.9	3.92	34.1	31.4	4.07	39.4	35.9	4.23	45.3	40.2	4.42	51.8	47.2	4.65	59.5	59.5	4.95	68.7	68.7	5.34	79.1	79.1	5.86
	2150	29.5	27.1	3.95	34.3	31.5	4.10	39.6	36.1	4.25	45.5	40.4	4.44	52.1	47.4	4.66	59.8	59.8	4.95	69.0	69.0	5.34	79.5	79.5	5.85
70	1750	28.7	26.4	4.06	33.7	31.0	4.25	38.8	35.4	4.43	44.7	39.7	4.65	51.1	46.5	4.90	58.6	58.6	5.22	67.5	67.5	5.64	77.6	77.6	6.17
	1900	28.9	26.6	4.09	33.9	31.2	4.26	39.1	35.6	4.44	45.0	39.9	4.64	51.4	46.8	4.89	59.0	59.0	5.20	67.9	67.9	5.60	78.1	78.1	6.13
	2000	29.0	26.7	4.11	34.1	31.3	4.28	39.2	35.7	4.45	45.1	40.1	4.65	51.6	46.9	4.89	59.2	59.2	5.19	68.2	68.2	5.59	78.4	78.4	6.11
	2150	29.3	26.9	4.14	34.3	31.5	4.30	39.4	35.9	4.47	45.4	40.3	4.66	51.8	47.2	4.89	59.5	59.5	5.19	68.5	68.5	5.59	78.8	78.8	6.10
75	1750	28.4	26.1	4.26	33.6	30.9	4.47	38.8	35.3	4.66	44.5	39.5	4.89	50.8	46.3	5.15	58.2	58.2	5.48	67.0	67.0	5.92	77.0	77.0	6.47
	1900	28.6	26.3	4.28	33.8	31.1	4.48	39.0	35.6	4.67	44.8	39.8	4.88	51.1	46.5	5.14	58.5	58.5	5.45	67.4	67.4	5.87	77.5	77.5	6.41
	2000	28.8	26.5	4.30	34.0	31.2	4.50	39.1	35.7	4.68	44.9	39.9	4.89	51.3	46.7	5.13	58.7	58.7	5.44	67.6	67.6	5.85	77.8	77.8	6.39
	2150	29.0	26.7	4.34	34.2	31.4	4.52	39.4	35.9	4.69	45.1	40.1	4.89	51.5	46.9	5.13	59.0	59.0	5.44	68.0	68.0	5.84	78.2	78.2	6.37

Multipliers for Determining the Performance With Other Indoor Sections

Indoor Section	Size	Heating		Indoor Section	Size	Heating	
		Capacity	Power			Capacity	Power
F(A,B)4AS(F,B)	060	1.00	1.00	FG3ASA	060	0.99	1.03
FB4ASB	070	0.99	0.95		—	—	—

- \* 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 system kilowatts.
- † 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 system capacity.
- EDB — Entering Dry Bulb

## System Design

- Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wg.
- Minimum outdoor operating air temperature for cooling mode without low-ambient operation accessory is 55°F (12.8°C).
- Maximum outdoor operating air temperature for cooling mode is 125°F (51.7°C).
- Minimum outdoor operating air temperature for heating mode is -30°F (-34.4°C).
- Maximum outdoor operating air temperature for heating mode is 66°F (18.9°C).
- For reliable operation, unit should be level in all horizontal planes.
- Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 50 ft (15.24m), indoor coil below = 150 ft (45.72m). (See items 8 and 9 following.)
- For interconnecting refrigerant tube lengths greater than 50 ft (15.24m), consult Residential Split System Long-Line Application Guideline available from equipment distributor.
- If any refrigerant tubing is buried, provide a minimum 6-in. (152mm) vertical rise to the valve connections at the unit. Refrigerant tubing lengths up to 36 in. (912mm) may be buried without further consideration. For buried refrigerant tubing lengths greater than 36 in. (912mm), consult the Residential Split-System Buried-Line Application Guideline.
- Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
- Mixmatches of indoor coil capacity more than 1 size larger than outdoor unit capacity may result in inadequate indoor comfort.

# Guide specifications

**Air-Cooled, Split-System  
Heat Pump  
38YCC  
2 To 5 Tons Nominal  
(7 To 17.5 Kw)**

## GENERAL

### 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 shall be manufactured in a facility registered to ISO9001/BS5750 Part II, International Standard for Quality Systems.

Unit will be rated in accordance with the latest edition of ARI Standard 240.

Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC (U.S.A. Standard).

Unit will be constructed in accordance with UL standards.

Unit cabinet will be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 500-hr salt spray test (U.S.A. Standard).

Air-cooled condenser coils will be leak tested at 150 psig (1034 KPa) and pressure tested at 300 psig (2068 KPa).

### Delivery, Storage, and Handling

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

## PRODUCTS

### Equipment

Factory-assembled, single piece, air-cooled heat pump unit. Contained within the unit enclosure will be all factory wiring, piping, controls, compressor, refrigerant charge (R-22), 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.

#### 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 PVC-coated 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.

#### Refrigeration Components

Refrigeration circuit components will include liquid line shutoff valve with sweat connections, vapor shutoff valve with sweat connections, system charge of refrigerant R-22, compressor oil, accumulator, and reversing valve.

### Operating Characteristics

The capacity of the unit will meet or exceed \_\_\_\_ Btuh (\_\_\_\_ kw) 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 (\_\_\_\_ kw) or greater at conditions of \_\_\_\_ CFM (\_\_\_\_ L/S) entering air temperature at the evaporator at \_\_\_\_ F (\_\_\_\_ C) wet bulb and \_\_\_\_ F (\_\_\_\_ C) dry bulb, and air entering the unit at \_\_\_\_ F (\_\_\_\_ C).

### Electrical Requirements

Nominal unit electrical characteristics will be \_\_\_\_ v, 1 phase, 50 hertz. 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.



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