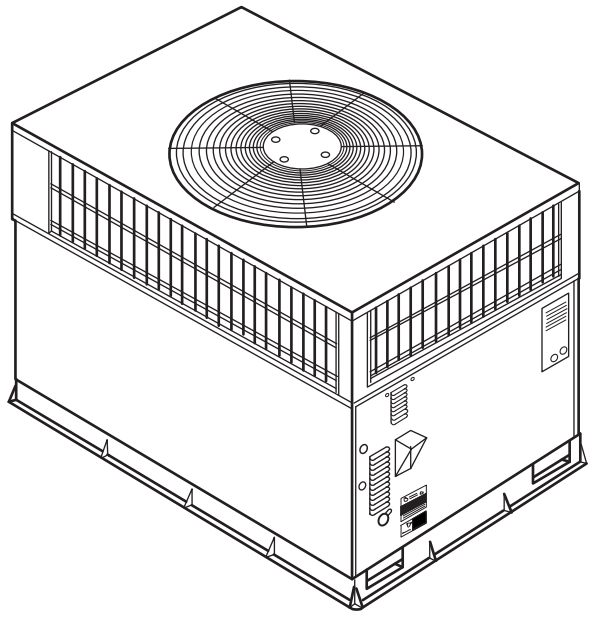
48EZ
Comfort™ 13 SEER Single−Packaged HYBRID HEAT® Dual Fuel System with Puron® (R−410A) Refrigerant Single and Three Phase 2−5 Nominal Tons (Sizes 024−060)

Carrier®
Turn to the Experts℠

Product Data



A99338

Fig. 1 - Unit 48EZ

Single-Packaged Products with Energy-Saving Features and Puron® refrigerant.

- Up to 13.5 SEER
- Up to 7.8 HSPF
- Up to 80.4% AFUE
- Factory-Installed TXV
- Multi-Speed Blower-Standard
- Direct Spark Ignition

FEATURES/BENEFITS

One-piece heating and cooling units with low sound levels, easy installation, low maintenance, and dependable performance.

Puron Environmentally Sound Refrigerant is Carrier's unique refrigerant designed to help protect the environment. Puron is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. Puron refrigerant is in service in millions of systems, proving highly reliable, environmentally sound performance.

Easy Installation

Factory-assembled package is a compact, fully self-contained, combination gas heating/electric heating and cooling unit that is prewired, pre-piped, and pre-charged for minimum installation expense. These units are available in a variety of standard and optional heating/ cooling size combinations with voltage options to meet residential and light commercial requirements. Units are lightweight and install easily on a rooftop or at ground level. The high tech composite base eliminates rust problems associated with ground level applications.

Convertible duct configuration

Unit is designed for easy use in either downflow or horizontal applications. Each unit is easily converted from horizontal to downflow with the two duct covers, standard on 3 phase units and available as an accessory for single phase units. Downflow operation is easily provided in the field to allow vertical ductwork connections. The basepan utilizes knockout style seals on the bottom openings to ensure a positive seal in the horizontal airflow mode.

Efficient operation High-efficiency design offers SEER (Seasonal Energy Efficiency Ratios) of up to 13.5, HSPF of up to 7.8 and AFUE (Annual Fuel Utilization Efficiency) ratings as high as 80.4%.

Energy-saving, direct spark ignition saves gas by operating only when the room thermostat calls for heating. Standard units are furnished with natural gas controls. A low-cost field installed kit for propane conversion is available for all units.

48EZN units are dedicated Low NOx units designed for California installations. These models meet the California maximum oxides of nitrogen (NOx) emissions requirement of 40 nanograms/joule or less as shipped from the factory and MUST be installed in California Air Quality Management Districts where a Low NOx rule exists.

Durable, dependable components Compressors are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Each compressor also has vibration isolation to provide quieter operation. All compressors have internal high pressure and overcurrent protection.

Monoport inshot burners produce precise air-to-gas mixture, which provides for clean and efficient combustion. The large monoport on the inshot (or injection type) burners seldom, if ever, requires cleaning. All gas furnace components are accessible in one compartment.

Turbo-tubular™ heat exchangers are constructed of aluminized steel for corrosion resistance and optimum heat transfer for improved efficiency. The tubular design permits hot gases to make multiple passes across the path of the supply air.

In addition, dimples located on the heat exchanger walls force the hot gases to stay in close contact with the walls, improving heat transfer.

Direct-drive multi-speed brushless DC blower motor is standard on all 48EZ models. Direct-drive, PSC condenser-fan motors are designed to help reduce energy consumption and provide for cooling operation down to 40°F (4.4°C) outdoor temperature. Motormaster® II low ambient kit is available as a field installed accessory.

Thermostat Controls

In order to take full advantage of the features afforded by your HYBRID HEAT® (dual-fuel) product, you need to install the Edge® Thermidistat™ Control in either its programmable (part # TP-PRH) or non-programmable (TP-NRH) models.

Thermostatic Expansion Valve - A hard shutoff, balance port TXV maintains a constant superheat at the evaporator exit (cooling cycle) resulting in higher overall system efficiency.

Refrigerant system is designed to provide dependability. Liquid filter driers are used to promote clean, unrestricted operation. Each unit leaves the factory with a full refrigerant charge. Refrigerant service connections make checking operating pressures easier.

High and Low Pressure Switches provide added reliability for the compressor.

Indoor and Outdoor coils are computer-designed for optimum heat transfer and efficiency. The indoor coil is fabricated from copper tube and aluminum fins and is located inside the unit for protection against damage. The outdoor coil is internally mounted on the top tier of the unit. Copper fin coils and pre-coated fin coils are available from the factory by special order. These coils are recommended in applications where aluminum fins are likely to be damaged due to corrosion. They are ideal for seacoast applications.

Low sound ratings ensure a quiet indoor and outdoor environment with sound ratings as low as 74dBA.

Easy to service cabinets provide easy single-panel accessibility to serviceable components during maintenance and installation. The base with integrated drain pan provides easy ground level installation with or without a mounting pad. Convenient rigging-holds are provided to manipulate the unit on the jobsite. A nesting feature ensures a positive basepan to roof curb seal when the unit is roof mounted. A convenient 3/4-in. (19 mm) wide perimeter flange makes frame mounting on a rooftop easy.

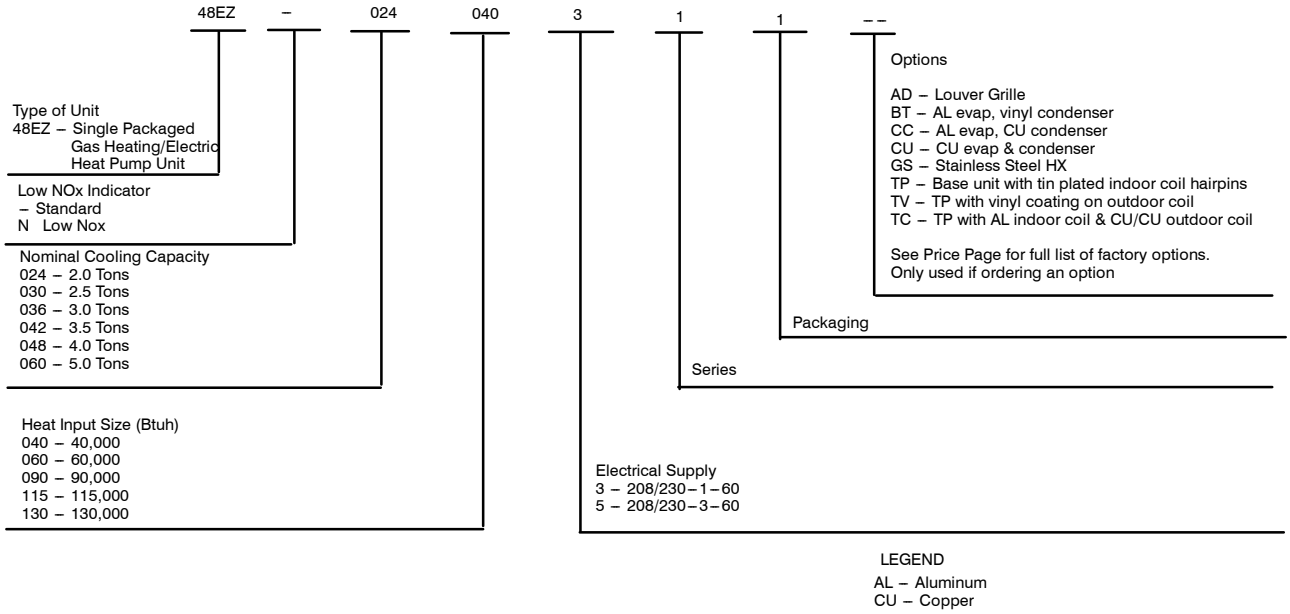
Integrated Gas Control (IGC) board provides safe and efficient control of heating and simplifies trouble-shooting through its built-in diagnostic function.

Cabinets are constructed of heavyduty, phosphated, zinc-coated prepainted steel capable of withstanding 500 hours in salt spray. Interior surfaces of the evaporator/heat exchanger compartment are insulated with cleanable semi-rigid insulation board, which keeps the conditioned air from being affected by the outdoor ambient temperature and provides improved indoor air quality. (Conforms to American Society of Heating, Refrigeration and Air Conditioning Engineers No. 62P.) The sloped drain pan minimizes standing water in the drain. An external drain is provided.

Short-Cycling protection for the compressor is incorporated into our defrost control board ensuring a five minute delay (+/-2 minutes) before restarting compressor after shutdown for any reason.

TABLE OF CONTENTS

MODEL NUMBER NOMENCLATURE



ISO 9001:2000

ARI Standard 210/240
Unitary Heat Pumps

ARI* CAPACITIES

COOLING CAPACITIES AND EFFICIENCIES

UNIT 48EZ	NOMINAL TONS	STANDARD CFM	NET COOLING CAPACITIES (Btuh)	EER**	SEER†
024---311	2	800	24,000	11.5	13.5
030---311/511	2-1/2	1000	30,000	11.2	13.2
036---311/511	3	1200	35,400	11.5	13.5
042---311/511	3-1/2	1400	40,500	11.2	13.4
048---311/511	4	1600	47,500	11.5	13.5
060---311/511	5	1750	57,000	11.4	13.0

HEAT PUMP HEATING CAPACITIES AND EFFICIENCIES

UNIT 48EZ	HEATING CAPACITY (Btuh) @ 47°F (8.3°C)	COP @ 47°F (8.3°C)	HEATING CAPACITY (Btuh) @ 17°F (–8.3°C)	COP @ 17°F (–8.3°C)	HSPF†
024---311	24,000	3.5	12,400	2.2	7.8
030---311/511	30,000	3.5	17,600	2.3	7.8
036---311/511	35,400	3.5	19,000	2.2	7.8
042---311/511	40,500	3.5	21,800	2.2	7.7
048---311/511	47,000	3.6	25,600	2.3	7.7
060---311/511	56,000	3.5	30,800	2.2	7.8

LEGEND
dBA–Sound Levels (decibels)
db—Dry Bulb
SEER—Seasonal Energy Efficiency Ratio
wb—Wet Bulb
COP–Coefficient of Performance
HSPF–Heating Season Performance Factor
* Air Conditioning & Refrigeration Institute.
**At "A" conditions–80°F (26.7°C) indoor db/67°F (19.4°C) indoor wb & 95°F (35°C) outdoor db.
† Rated in accordance with U.S. Government DOE Department of Energy) test procedures and/or ARI Standards 210/240.

Notes:
1. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
Cooling Standard: 80°F (26.7°C) db, 67°F (19.4°C) wb indoor entering–air temperature and 95°F (35°C) db outdoor entering–air temperature.
2. Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

GAS HEATING CAPACITIES AND EFFICIENCIES

UNIT 48EZ	HEATING INPUT (Btuh)	OUTPUT CAPACITY (Btuh)	TEMPERATURE RISE RANGE F (C)	AFUE (%)
024040 **030040**	40,000	32,000	30-60 (16.7-33.3)	80.0
024060 **030060** **036060** **042060**	60,000	48,000 48,000 48,000 47,000	25-55 (13.9-30.6)	80.0 80.0 80.0 78.5
036090 **042090** **048090** **060090**	90,000	72,000 73,000 73,000 73,000	35-65 (19.4-36.1)	79.3 80.4 80.4 80.4
048115 **060115**	115,000	93,000	30-60 (16.7-33.3)	80.3
048130 **060130**	130,000	103,000	35-65 (19.4-36.1)	78.9

LEGEND
AFUE—Annual Fuel Utilization Efficiency
NOTE: Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

PHYSICAL DATA

UNIT SIZE 48EZ	024040	024060	030040	030060	036060	036090	042060	042090
NOMINAL CAPACITY – ton	2	2	2–1/2	2–1/2	3	3	3–1/2	3–1/2
OPERATING WEIGHT – lb.	334	334	339	339	362	362	424	424
(kg)	151	151	154	154	164	164	192	192
COMPRESSORS	Scroll							
Quantity	1							
REFRIGERANT (R–410A)								
Quantity – lb	8.8	8.8	7.4	7.4	9.6	9.6	10.2	10.2
(kg)	4.0	4.0	3.4	3.4	4.4	4.4	4.6	4.6
REFRIGERANT METERING DEVICE	Indoor–TXV, Outdoor–Accurater							
OUTDOOR ORIFICE								
in. (qty)	0.032 (2)	0.032 (2)	0.038 (2)	0.038 (2)	0.035 (Left OD Coil) 0.038 (Right OD Coil)		0.040 (2)	0.040 (2)
(mm)	.81	.81	.97	.97	.89/.97		1.02	1.02
OUTDOOR COIL								
Rows...Fins/in.	2...21	2...21	2...21	2...21	2...21	2...21	2...21	2...21
Face Area – sq ft	11.9	11.9	11.9	11.9	13.6	13.6	15.5	15.5
OUTDOOR FAN								
Nominal Cfm	2350	2350	2350	2350	2350	2350	2800	2800
Diameter – in.	22	22	22	22	22	22	22	22
(mm)	559	559	559	559	559	559	559	559
Motor Hp (Rpm)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)	1/8 (825)
INDOOR COIL								
Rows...Fins/in.	3...17	3...17	3...17	3...17	4...15	4...15	3...17	3...17
Face Area – sq ft	3.7	3.7	3.7	3.7	3.7	3.7	4.7	4.7
INDOOR BLOWER								
Nominal Cooling Airflow – (CFM)	800	800	1000	1000	1200	1200	1400	1400
Size – in.	10x10	10x10	10x10	10x10	11x10	11x10	11x10	11x10
(mm)	254x254	254x254	254x254	254x254	279x254	279x254	279x254	279x254
Motor – hp	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4
FURNACE SECTION*								
Burner Orifice								
Natural Gas Qty...Drill Size	2...44	2...38	2...44	2...44	2...38	3...38	2...38	3...38
Propane GasQty...Drill Size	2...55	2...53	2...55	2...53	2...53	3...53	2...53	3...53
HIGH–PRESSURE SWITCH								
(psig) Cut–out	650 +/–15							
Reset (Auto)	420 +/–25							
LOSS–OF–CHARGE / LOW–PRESSURE SWITCH (Liquid Line) (psig)								
Cut–out	20 +/–5							
Reset (auto)	45 +/–10							
RETURN–AIR FILTERS † ‡								
Throwaway (in.)	20x20x1	20x24x1			24x30x1			
(mm)	508x508x25	508x610x25			610x762x25			

*Based on altitude of 0 to 2000 ft (0–610 m).

†Required filter sizes shown are based on the larger of the ARI (Air Conditioning and Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for high–capacity type. Air filter pressure drop for non–standard filters must not exceed 0.08 IN. W.C.

‡ If using accessory filter rack refer to filter rack installation instructions for correct filter size and quantity.

PHYSICAL DATA (CONT)

UNIT SIZE 48EZ	048090	048115	048130	060090	060115	060130
NOMINAL CAPACITY – ton	4	4	4	5	5	5
OPERATING WEIGHT – lb	459	459	459	478	478	478
(kg)	208	208	208	217	217	217
COMPRESSORS	Scroll					
Quantity	1					
REFRIGERANT (R–410A)						
Quantity – lb	9.9	9.9	9.9	12.5	12.5	12.5
(kg)	4.5	4.5	4.5	5.7	5.7	5.7
REFRIGERANT METERING DEVICE	TXV					
OUTDOOR ORIFICE – in. (qty)	0.046 (2)			0.052 (2)		
(mm)	1.2			1.3		
OUTDOOR COIL						
Rows...Fins – in.	2...21	2...21	2...21	2...21 |	2...21	2...21
Face Area – sq ft	15.5	15.5	15.5	19.4	19.4	19.4
OUTDOOR FAN						
Nominal Cfm	3300	3300	3300	3300	3300	3300
Diameter – in.	22	22	22	22	22	22
(mm)	559	559	559	559	559	559
Motor Hp – Rpm	1/4 (1100)	1/4 (1100)	1/4 (1100)	1/4 (1100)	1/4 (1100)	1/4 (1100)
INDOOR COIL						
Rows...Fins – in.	3...17	3...17	3...17	4...17	4...17	4...17
Face Area – sq ft	5.7	5.7	5.7	5.7	5.7	5.7
INDOOR BLOWER						
Nominal Cooling Airflow – (CFM)	1600	1600	1600	1750	1750	1750
Size – in.	11x10	11x10	11x10	11x10	11x10	11x10
(mm)	279x254	279x254	279x254	279x254	279x254	279x254
Motor – hp	1.0	1.0	1.0	1.0	1.0	1.0
FURNACE SECTION*						
Burner Orifice						
Natural Gas Qty...Drill Size	3...38	3...33	3...31	3...38	3...33	3...31
Propane GasQty...Drill Size	3...53	3...51	3...49	3...53	3...51	3...49
HIGH – PRESSURE SWITCH (psig)						
Cut – out	650 +/–15					
Reset (Auto)	420 +/–25					
LOSS – OF – CHARGE / LOW – PRESSURE SWITCH (Liquid Line) (psig)						
Cut – out	20 +/–5					
Reset (auto)	45 +/–10					
RETURN – AIR FILTERS †						
Throwaway (in.)	24x36x1					
(mm)	(610x914x25)					

*Based on altitude of 0 to 2000 ft (0–610 m).

†Required filter sizes shown are based on the larger of the ARI (Air Conditioning and Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for high–capacity type. Air filter pressure drop for non–standard filters must not exceed 0.08 IN. W.C.

‡ If using accessory filter rack refer to filter rack installation instructions for correct filter size and quantity.

Sound Power

MODEL 48EZ	SOUND RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA) (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
024– – –311	76	62.5	67.0	71.5	69.0	66.0	60.5	55.0
030– – –311/511	76	68.5	65.0	70.5	70.0	67.0	63.0	56.5
036– – –311/511	75	65.5	63.5	67.5	69.5	65.5	61.0	53.5
042– – –311/511	74	63.5	63.0	67.0	69.5	68.5	62.5	59.5
048– – –311/511	78	63.0	70.0	71.0	73.0	70.0	65.5	59.5
060– – –311/511	78	65.0	67.0	71.5	72.5	71.5	68.0	60.5

NOTE: Tested in accordance with ARI Standard 270 (not listed in ARI).

OPTIONS AND ACCESSORIES

Factory-installed options

Louver grille provides hail and vandalism protection. A wire grille is standard on all models. See model number nomenclature for louver grille options.

Coil options include copper/copper and vinyl-coated construction for refrigerant coils. Units are shipped standard with copper tube/aluminum fin construction. See model number nomenclature for coil options.

Field-installed accessories

Economizer with Solid-State Controls and Barometric Relief Dampers
Manual Air Damper (25% open)
Filter Rack
Flat Roof Curbs (8-in. [203 mm] and 14-in. [356 mm])
Square-to-Round Duct Transition Kit
Thermostats
Crankcase Heater
Compressor Start Kit (for use on single-phase units only)
Natural to Propane Gas Conversion Kit (0-2000 ft) (0-610 m)
High Altitude Propane Conversion Kit
Rigging Kit
Low Ambient Kit (Motormaster® II Control)
Propane to Natural Gas Conversion Kit (0-2000 ft) (0-610 m)

Economizer with solid-state controls and barometric relief dampers includes filter racks and provide outdoor air during cooling and reduce compressor operation.

Manual outside air damper includes hood and filter rack with adjustable damper blade for up to 25% outdoor air.

Flat roof curbs in both 8 in. (203 mm) and 14 in. (356 mm) sizes are available for roof mounted applications.

Square-to-round duct transition kit enables 024-048 size units to be fitted to 14 in. (356 mm) round ductwork.

Compressor start kit assists compressor start-up by providing additional starting torque on single phase units.

Corporate Thermostats provide control for the system heating and cooling functions.

Crankcase heater provides anti-floodback protection for low-load cooling applications.

Natural to propane gas conversion kit allows for conversion from natural gas to propane gas (0-2000 ft [0-610 m]).

Rigging kit includes lifting brackets which are inserted into the unit base rigging holds to lift unit for rooftop applications.

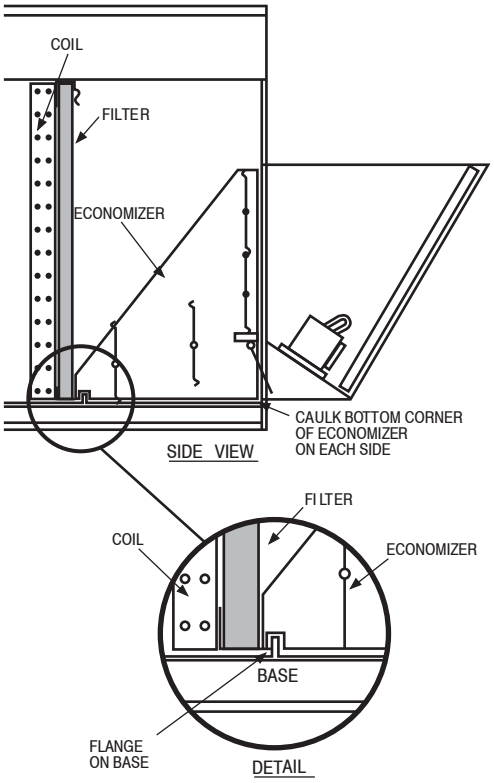
Low-ambient kit (Motormaster II control) allows the use of mechanical cooling down to outdoor temperatures as low as 0°F (-18°C) when properly installed.

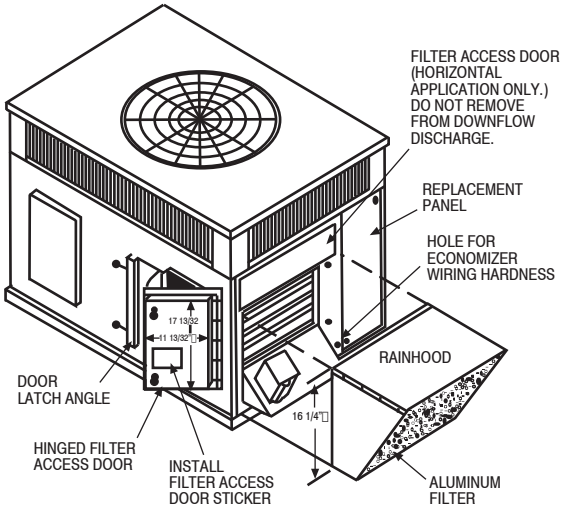
Filter rack features easy installation, serviceability, and high-filtering performance for vertical applications.

High altitude propane conversion kit is for use at 2001 to 6000 ft (610-1829 m) above sea level. Kit consists of propane gas orifices that compensate for gas heat operation at high altitude.

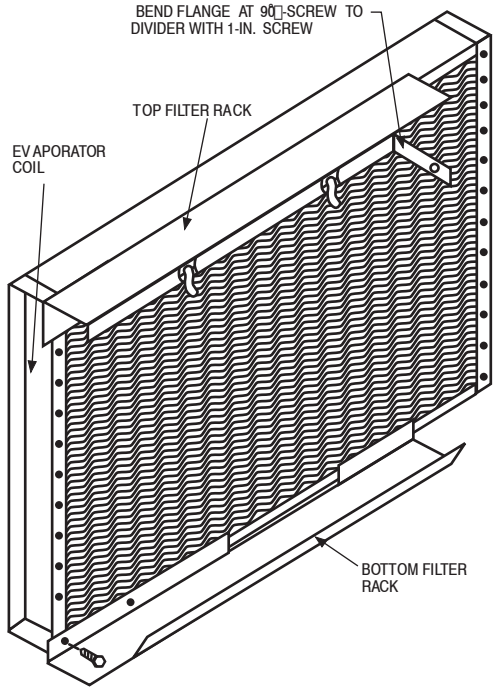
Propane to natural gas conversion kit allows for conversion from propane to natural gas for altitudes of 0-2000 ft (0-610 m).

ECONOMIZER

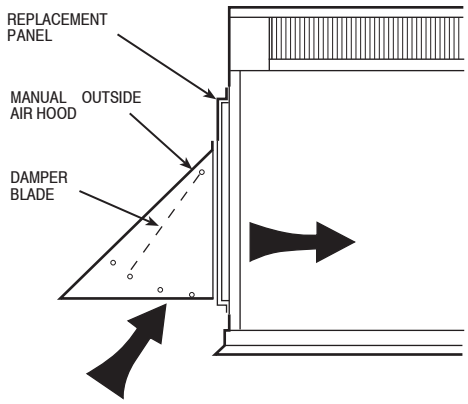




FILTER RACK



MANUAL OUTSIDE AIR DAMPER



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UNIT DIMENSIONS - 48EZ024-036

UNIT	SERIES	ELECTRICAL CHARACTERISTICS	UNIT WT.		UNIT HEIGHT	CENTER OF GRAVITY IN/MM		
			LBS	KG	"A"	X	Y	Z
48EZ024	1	208/230-1-60	334	151	39.02[991.1]	27 [676]	12 [305]	18 [457]
48EZ030	1	208/230-1-60, 208/230-3-60	340	154	39.02[991.1]	27 [676]	12 [305]	18 [457]
48EZ036	1	208/230-1-60, 208/230-3-60	362	165	41.02[1041.9]	25 [635]	11 [279]	13 [330]

OPERATIONAL CORNER WEIGHTS LBS/KG				
	"1"	"2"	"3"	"4"
024	50/23	67/30	100/45	117/53
030	51/23	68/31	102/46	119/54
036	54/25	72/33	109/49	127/58

REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

	INCHES [MM]
TOP OF UNIT	14.00 [355.6]
DUCT SIDE OF UNIT	2.00 [50.8]
SIDE OPPOSITE DUCTS	14.00 [355.6]
BOTTOM OF UNIT	0.0 [0.0]
FLUE PANEL	36.00 [914.4]

NEC. REQUIRED CLEARANCES.

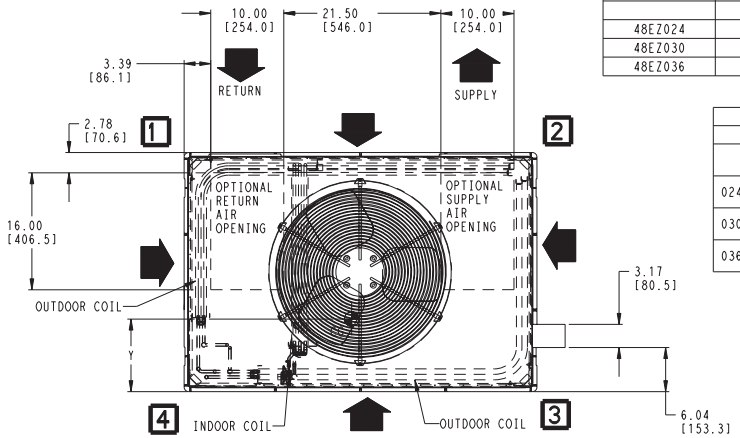
	INCHES [MM]
BETWEEN UNITS, POWER ENTRY SIDE	42.00 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	36.00 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	42.00 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

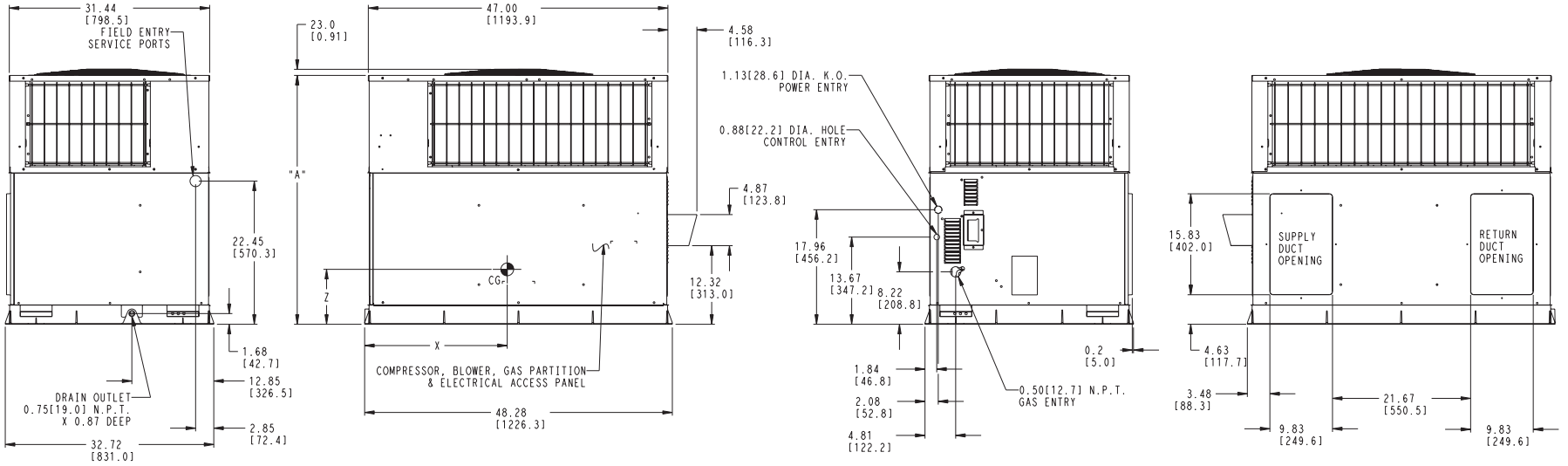
	INCHES [MM]
EVAP. COIL ACCESS SIDE	36.00 [914.0]
POWER ENTRY SIDE	42.00 [1066.8]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48.00 [1219.2]
SIDE OPPOSITE DUCTS	36.00 [914.0]
DUCT PANEL	12.00 [304.8]*

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 12.00 [304.8] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

DIMENSIONS IN [] ARE IN MILLIMETERS



TOP VIEW



LEFT SIDE VIEW

FRONT VIEW

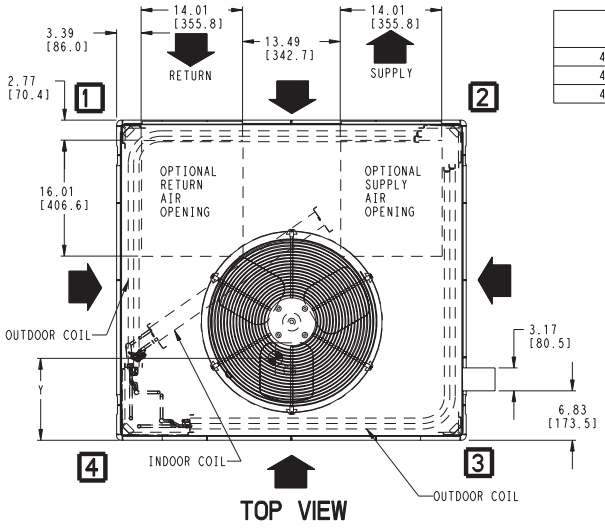
RIGHT SIDE VIEW

REAR VIEW

48EZ500053	REV 4.0

A08158

UNIT DIMENSIONS - 48EZ042-060



TOP VIEW

UNIT	SERIES	ELECTRICAL CHARACTERISTICS	UNIT WT.		UNIT HEIGHT	CENTER OF GRAVITY IN/MM		
			LBS	KG	"A"	X	Y	Z
48EZ042	1	208/230-1-60, 208/230-3-60	424	192	42.98[1091.7]	27 [686]	12 [305]	17 [432]
48EZ048	1	208/230-1-60, 208/230-3-60	460	208	42.98[1091.7]	27 [686]	12 [305]	17 [432]
48EZ060	1	208/230-1-60, 208/230-3-60	478	217	46.98[1193.3]	27 [686]	10 [254]	18 [457]

OPERATING CORNER WEIGHTS LBS/KG				
	"1"	"2"	"3"	"4"
042	64/29	85/38	127/58	148/67
048	69/31	92/42	138/63	161/73
060	72/33	96/43	143/65	167/76

REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

	INCHES [MM]
TOP OF UNIT	14.00 [355.6]
DUCT SIDE OF UNIT	2.00 [50.8]
SIDE OPPOSITE DUCTS	14.00 [355.6]
BOTTOM OF UNIT	0.0 [0.0]
FLUE PANEL	36.00 [914.4]

NEC. REQUIRED CLEARANCES.

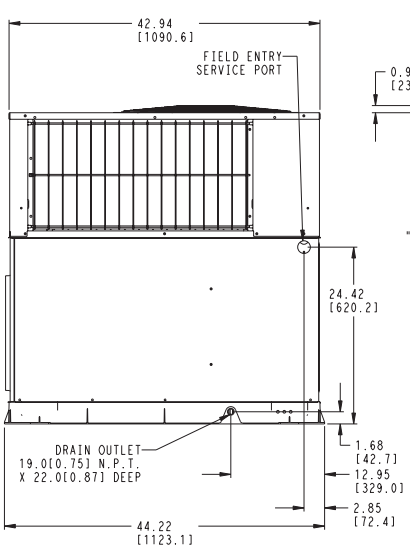
	INCHES [MM]
BETWEEN UNITS, POWER ENTRY SIDE	42.00 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	36.00 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	42.00 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

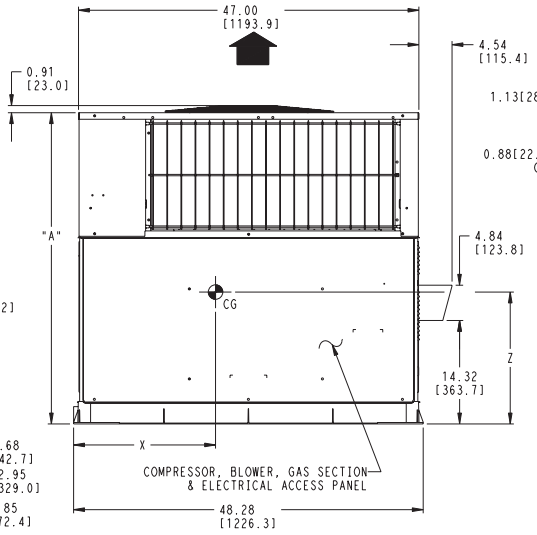
	INCHES [MM]
EVAP. COIL ACCESS SIDE	36.00 [914.0]
POWER ENTRY SIDE	42.00 [1066.8]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48.00 [1219.2]
SIDE OPPOSITE DUCTS	36.00 [914.0]
DUCT PANEL	12.00 [304.8]*

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 12.00 [304.8] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

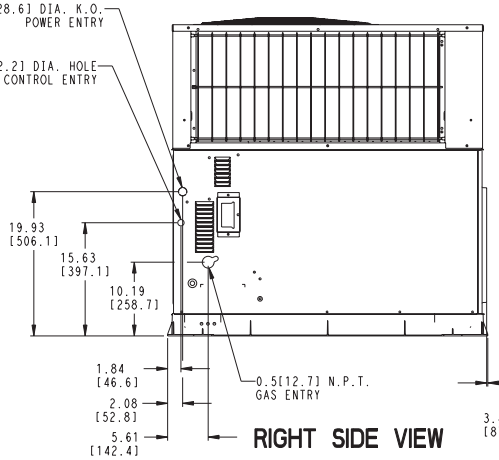
DIMENSIONS IN [] ARE IN MILLIMETERS



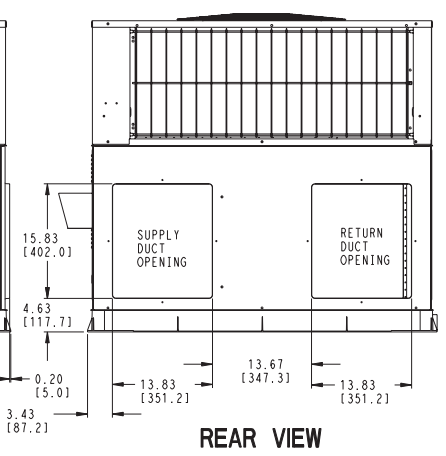
LEFT SIDE VIEW



FRONT VIEW



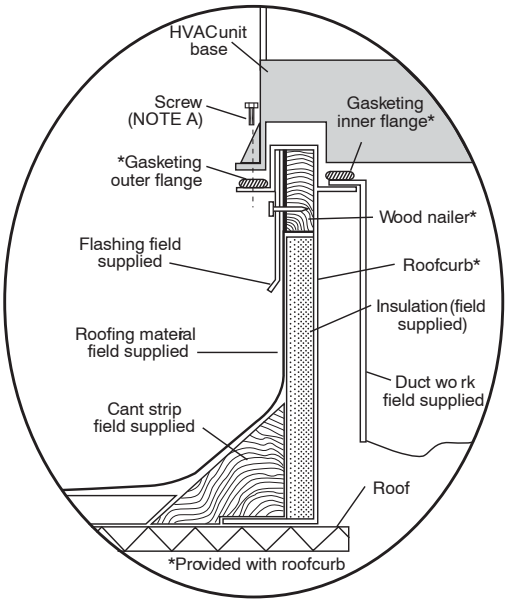
RIGHT SIDE VIEW



REAR VIEW

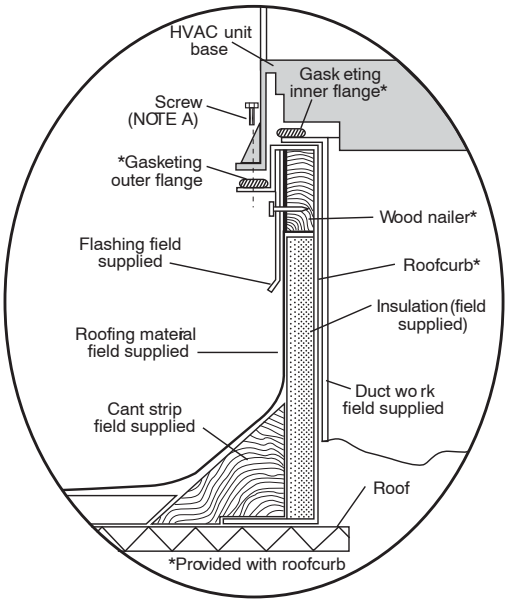
48EZ500054	REV 4.0

ACCESSORY DIMENSIONS



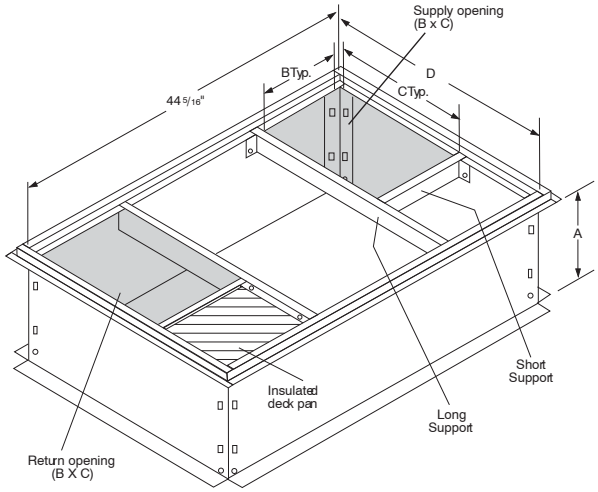
Roof Curb for Small Cabinet

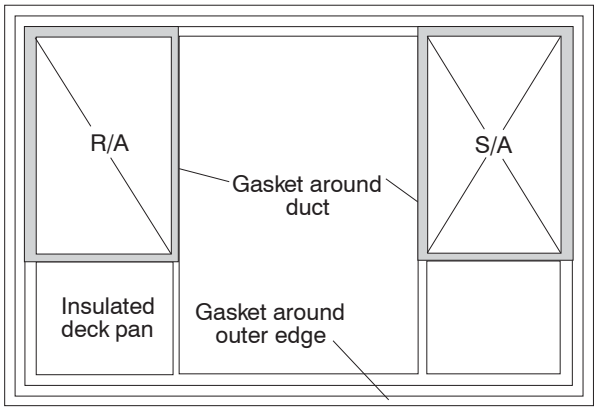
Note A: When unit mounting screw is used retainer bracket must also be used.



Roof Curb for Large Cabinet

Note A: When unit mounting screw is used retainer bracket must also be used.



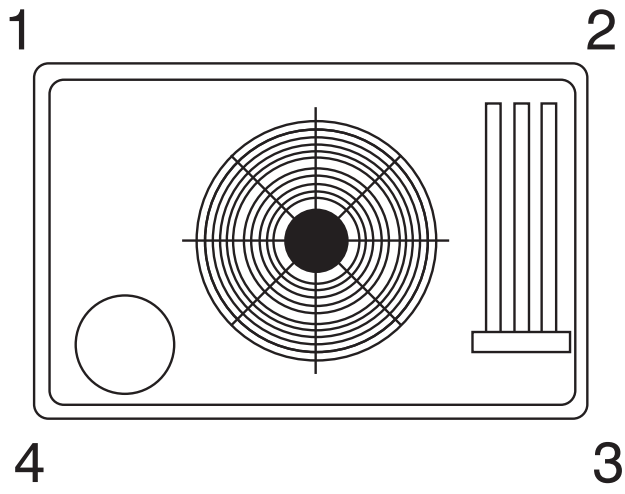


C00076

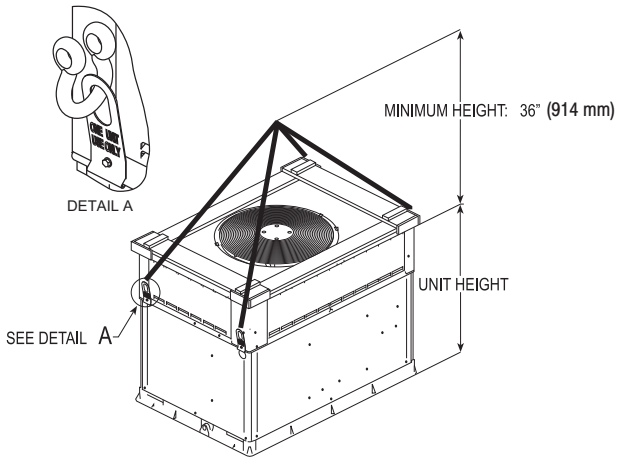
UNIT SIZE	CATALOG NUMBER	A IN. (MM)	B IN. (MM)	C IN. (MM)	D IN. (MM)
48EZ024-036	CPRFCURB006A00	8 (203)	11 (279)	16-1/2 (419)	28-3/4 (730)
	CPRFCURB007A00	14 (356)	11 (279)	16-1/2 (419)	28-3/4 (730)
48EZ042-060	CPRFCURB008A00	8 (203)	16-3/16 (411)	17-3/8 (441)	40-1/4 (1022)
	CPRFCURB009A00	14 (356)	16-3/16 (411)	17-3/8 (441)	40-1/4 (1022)

NOTES:

1. Roof curb must be set up for unit being installed.
2. Seal strip must be applied, as required, to unit being installed.
3. Dimensions are in inches.
4. Dimension in ( ) are in millimeters.
5. Roof curb is made of 16-gauge steel.
6. Attach ductwork to curb (flanges of duct rest on curb).
7. Insulated panels: 1-in. (25 mm) thick fiberglass 1 lb. density.
8. When unit mounting screw is used (see Note A), a retainer bracket must be used as well. This bracket must also be used when required by code for hurricane or seismic conditions. This bracket is available through Micrometl.



A08015



A08005

RIGGING WEIGHTS (SMALL CABINET)							RIGGING WEIGHTS (LARGE CABINET)						
Unit	024		030		036		Unit	042		048		060	
	lb	kg	lb	kg	lb	kg		lb	kg	lb	kg	lb	kg
Rigging Weight	345	156	350	159	373	169	Rigging Weight	439	199	474	215	493	224
Shipping Weight	382	173	387	176	410	186	Shipping Weight	476	216	511	232	530	240

SELECTION PROCEDURE (WITH EXAMPLE)

1. Determine cooling and heating requirements at design conditions:

Given:

Required Cooling Capacity (TC) . . . . . 34,500 Btuh
Sensible Heat Capacity (SHC) . . . . . 26,000 Btuh
Required Heating Capacity . . . . . 60,000 Btuh
Condenser Entering Air Temperature . . . . . 95°F (35°C)
Indoor-Air Temperature 80°F (27°C) edb 67°F (19°C) ewb
Evaporator Air Quantity . . . . . 1200 CFM
External Static Pressure . . . . . 0.200 IN. W.C.
Electrical Characteristics 208-1-60

2. Select unit based on required cooling capacity.

Enter Net Cooling Capacities table at condenser entering temperature of 95°F (35°C). Unit 036 at 1200 cfm and 67°F (19°C) ewb (entering wet bulb) will provide a total capacity of 35,400 Btuh and a SHC of 26,200 Btuh. Calculate SHC correction, if required, using Note 4 under Cooling Capacities tables.

3. Select heating capacity of unit to provide design condition requirement.

In the Heating Capacities and Efficiencies table, note that the unit 036090 will provide 72,000 Btuh with an input of 90,000 Btuh.

4. Determine fan speed and power requirements at design conditions.

Before entering the air delivery tables, calculate the total static pressure required. From the given example, the Wet Coil Pressure Drop Table, and the Filter Pressure Drop Table:

External Static Pressure	0.200 IN. W.C.
Filter	0.130 IN. W.C.
Wet Coil Pressure Drop	0.180 IN. W.C.
Total Static Pressure	0.510 IN. W.C.

Enter the table for Dry Coil Air Delivery—horizontal and downflow Discharge. At 0.5 ESP (external static pressure), in cooling the fan will deliver 1209 cfm with the MEDIUM speed tap selected.

5. Select unit that corresponds to power source available.

The Electrical Data Table shows that the unit is designed to operate at 208-1-60.

PERFORMANCE DATA

024 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM / BF	EWB °F (°C)	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total System KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens	
700 / 0.07	57 (13.9)	25.26	25.26	1.76	23.08	23.08	1.90	20.94	20.94	2.05	18.84	18.84	2.19	16.77	16.77	2.34	14.69	14.69	2.47
	62 (16.7)	26.21	22.41	1.76	23.78	21.19	1.91	21.41	20.00	2.05	19.09	18.76	2.20	16.84	17.43	2.34	14.70	14.70	2.47
	63* (17.2)	26.60	18.28	1.76	24.11	17.22	1.91	21.68	16.19	2.05	19.30	15.13	2.20	16.96	14.06	2.34	14.65	12.96	2.47
	67 (19.4)	28.72	19.01	1.77	26.05	17.92	1.92	23.44	16.87	2.06	20.89	15.80	2.21	18.38	14.71	2.35	15.87	13.58	2.49
	72 (22.2)	31.48	15.60	1.79	28.57	14.64	1.93	25.72	13.69	2.08	22.93	12.73	2.22	20.16	11.75	2.37	17.41	10.71	2.50
800 / 0.08	57 (13.9)	26.43	26.43	1.79	24.14	24.14	1.93	21.88	21.88	2.07	19.65	19.65	2.22	17.46	17.46	2.36	15.26	15.26	2.50
	62 (16.7)	26.97	24.05	1.79	24.47	22.72	1.93	22.03	21.40	2.07	19.68	19.68	2.22	17.46	17.46	2.36	15.27	15.27	2.50
	63* (17.2)	27.31	19.46	1.79	24.73	18.35	1.93	22.21	17.24	2.08	19.74	16.12	2.22	17.32	15.02	2.36	14.93	13.84	2.49
	67 (19.4)	29.48	20.26	1.80	26.71	19.14	1.94	24.00	18.00	2.09	21.36	16.88	2.23	18.75	15.74	2.37	16.16	14.52	2.51
	72 (22.2)	32.29	16.38	1.81	29.27	15.39	1.96	26.31	14.39	2.10	23.42	13.39	2.25	20.55	12.36	2.39	17.71	11.29	2.52
900 / 0.09	57 (13.9)	27.44	27.44	1.81	25.03	25.03	1.95	22.67	22.67	2.10	20.35	20.35	2.24	18.05	18.05	2.39	15.74	15.74	2.52
	62 (16.7)	27.64	25.52	1.81	25.08	25.08	1.95	22.67	22.67	2.10	20.35	20.35	2.24	18.05	18.05	2.39	15.74	15.74	2.52
	63* (17.2)	27.88	20.58	1.81	25.22	19.43	1.95	22.63	18.27	2.10	20.09	17.10	2.24	17.61	15.92	2.38	15.16	14.68	2.51
	67 (19.4)	30.08	21.47	1.82	27.23	20.30	1.97	24.44	19.11	2.11	21.72	17.92	2.25	19.05	16.71	2.40	16.39	15.43	2.53
	72 (22.2)	32.93	17.13	1.84	29.82	16.10	1.98	26.78	15.06	2.12	23.80	14.02	2.27	20.86	12.95	2.41	17.94	11.83	2.54

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

024 Heating Extended Performance Table -10-60 (-23.3-15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																					
		–10 (–23.3)			0 (–17.8)			10 (–12.2)			20 (–6.7)			30 (–1.1)			40 (4.4)			50 (10)			60 (15.6)		
EDB	CFM	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	700	7.11	6.54	1.48	9.66	8.89	1.56	12.29	11.28	1.63	15.05	13.65	1.70	17.99	15.76	1.78	21.45	21.45	1.88	25.15	25.15	2.00	29.74	29.74	2.15
	800	7.26	6.68	1.49	9.82	9.04	1.56	12.47	11.44	1.62	15.24	13.82	1.68	18.23	15.98	1.75	21.75	21.75	1.84	25.58	25.58	1.94	30.48	30.48	2.07
	900	7.39	6.80	1.50	9.96	9.17	1.56	12.62	11.58	1.61	15.40	13.97	1.67	18.44	16.16	1.73	21.91	21.91	1.81	25.98	25.98	1.90	30.75	30.75	2.02
70 (21.1)	700	6.67	6.13	1.54	9.28	8.54	1.63	11.97	10.98	1.71	14.76	13.38	1.79	17.69	15.50	1.88	20.97	20.97	1.98	24.73	24.73	2.10	29.17	29.17	2.26
	800	6.82	6.27	1.55	9.45	8.70	1.63	12.15	11.15	1.70	14.96	13.57	1.77	17.92	15.70	1.85	21.32	21.32	1.93	25.15	25.15	2.04	29.90	29.90	2.18
	900	6.95	6.39	1.56	9.60	8.83	1.63	12.30	11.29	1.70	15.12	13.72	1.76	18.12	15.88	1.82	21.64	21.64	1.91	25.49	25.49	2.00	30.37	30.37	2.12
75 (23.9)	700	6.18	5.69	1.61	8.87	8.17	1.70	11.61	10.66	1.79	14.45	13.10	1.88	17.41	15.25	1.98	20.62	20.62	2.08	24.33	24.33	2.21	28.68	28.68	2.38
	800	6.33	5.82	1.62	9.05	8.33	1.70	11.80	10.83	1.78	14.65	13.29	1.86	17.63	15.45	1.94	20.92	20.92	2.04	24.72	24.72	2.15	29.30	29.30	2.29
	900	6.46	5.95	1.63	9.20	8.46	1.71	11.96	10.98	1.78	14.82	13.44	1.85	17.82	15.62	1.92	21.17	21.17	2.00	25.06	25.06	2.11	29.87	29.87	2.24

PERFORMANCE DATA (CONT)

030 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM / BF	EWB °F (°C)	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens	
875 / 0.09	57 (13.9)	28.90	28.90	1.75	27.66	27.66	1.98	26.34	26.34	2.23	24.91	24.91	2.50	23.31	23.31	2.79	21.49	21.49	3.10
	62 (16.7)	30.13	26.11	1.76	28.62	25.29	1.98	27.03	24.40	2.23	25.33	23.41	2.50	23.49	22.28	2.79	21.49	21.49	3.10
	63* (17.2)	30.53	21.33	1.76	28.98	20.56	1.99	27.34	19.74	2.23	25.59	18.86	2.50	23.67	17.91	2.79	21.53	16.85	3.10
	67 (19.4)	32.87	22.12	1.77	31.20	21.35	2.00	29.40	20.50	2.25	27.48	19.61	2.51	25.38	18.63	2.80	23.04	17.54	3.11
	72 (22.2)	35.81	18.16	1.79	33.93	17.39	2.01	31.94	16.59	2.26	29.81	15.73	2.53	27.48	14.79	2.82	24.87	13.74	3.12
1000 / 0.11	57 (13.9)	30.18	30.18	1.78	28.85	28.85	2.01	27.42	27.42	2.26	25.86	25.86	2.53	24.13	24.13	2.82	22.16	22.16	3.13
	62 (16.7)	30.95	27.96	1.79	29.37	27.05	2.01	27.71	26.05	2.26	25.93	25.93	2.53	24.13	24.13	2.82	22.15	22.15	3.13
	63* (17.2)	31.31	22.62	1.79	29.68	21.82	2.01	27.94	20.96	2.26	26.10	20.04	2.53	24.08	19.03	2.82	21.84	17.91	3.13
	67 (19.4)	33.68	23.51	1.80	31.90	22.68	2.03	30.00	21.80	2.27	27.99	20.86	2.54	25.79	19.83	2.83	23.33	18.68	3.13
	72 (22.2)	36.64	19.00	1.82	34.65	18.20	2.04	32.55	17.36	2.29	30.32	16.46	2.55	27.88	15.48	2.84	25.15	14.38	3.14
1125 / 0.12	57 (13.9)	31.28	31.28	1.81	29.85	29.85	2.04	28.30	28.30	2.29	26.64	26.64	2.56	24.79	24.79	2.85	22.68	22.68	3.15
	62 (16.7)	31.65	29.65	1.81	30.03	28.60	2.04	28.33	28.33	2.29	26.64	26.64	2.56	24.79	24.79	2.85	22.68	22.68	3.15
	63* (17.2)	31.93	23.86	1.82	30.22	23.02	2.04	28.41	22.12	2.29	26.48	21.16	2.56	24.39	20.11	2.84	22.07	18.92	3.15
	67 (19.4)	34.31	24.83	1.83	32.44	23.96	2.05	30.46	23.04	2.30	28.36	22.06	2.57	26.07	20.98	2.85	23.54	19.76	3.16
	72 (22.2)	37.28	19.79	1.84	35.20	18.96	2.07	33.02	18.08	2.31	30.70	17.15	2.58	28.17	16.14	2.87	25.35	14.98	3.17

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

030 Heating Extended Performance Table -10-60 (-23.3-15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																					
		–10 (–23.3)			0 (–17.8)			10 (–12.2)			20 (–6.7)			30 (–1.1)			40 (4.4)			50 (10)			60 (15.6)		
EDB	CFM	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	875	10.24	9.42	1.89	12.96	11.93	1.96	15.82	14.52	2.03	18.86	17.10	2.11	22.46	19.68	2.21	26.52	26.52	2.34	31.40	31.40	2.50	36.62	36.62	2.67
	1000	10.40	9.57	1.89	13.12	12.07	1.95	15.99	14.68	2.02	19.06	17.28	2.08	22.77	19.95	2.17	26.88	26.88	2.28	31.83	31.83	2.41	36.62	36.62	2.56
	1125	10.54	9.69	1.90	13.26	12.21	1.96	16.14	14.81	2.01	19.24	17.45	2.07	22.99	20.15	2.15	27.32	27.32	2.25	31.80	31.80	2.36	36.13	36.13	2.51
70 (21.1)	875	9.95	9.15	1.99	12.72	11.70	2.07	15.61	14.33	2.15	18.66	16.92	2.23	22.16	19.42	2.34	26.18	26.18	2.47	30.89	30.89	2.63	36.24	36.24	2.82
	1000	10.10	9.30	2.00	12.88	11.85	2.06	15.78	14.49	2.13	18.85	17.09	2.20	22.42	19.65	2.29	26.52	26.52	2.41	31.49	31.49	2.56	36.36	36.36	2.71
	1125	10.25	9.43	2.01	13.03	11.99	2.06	15.93	14.63	2.12	19.01	17.24	2.19	22.66	19.85	2.27	26.83	26.83	2.37	31.59	31.59	2.49	36.06	36.06	2.64
75 (23.9)	875	9.62	8.85	2.09	12.45	11.46	2.18	15.39	14.12	2.27	18.46	16.75	2.36	21.88	19.17	2.47	25.86	25.86	2.61	30.41	30.41	2.78	35.88	35.88	2.98
	1000	9.78	9.00	2.10	12.62	11.61	2.17	15.56	14.29	2.25	18.64	16.91	2.33	22.13	19.39	2.42	26.18	26.18	2.54	31.01	31.01	2.69	36.05	36.05	2.86
	1125	9.93	9.13	2.11	12.77	11.75	2.18	15.72	14.43	2.24	18.81	17.06	2.31	22.35	19.59	2.40	26.45	26.45	2.50	31.31	31.31	2.63	35.91	35.91	2.79

PERFORMANCE DATA (CONT)

036 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM / BF	EWB °F (°C)	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens	
1050 / 0.10	57 (13.9)	34.34	34.34	2.43	32.89	32.89	2.70	31.31	31.31	3.00	29.62	29.62	3.32	27.74	27.74	3.67	25.60	25.60	4.04
	62 (16.7)	35.46	31.44	2.44	33.72	30.48	2.71	31.86	29.41	3.00	29.90	28.20	3.32	27.78	27.78	3.67	25.60	25.60	4.04
	63* (17.2)	35.90	25.45	2.44	34.11	24.56	2.71	32.19	23.62	3.00	30.13	22.58	3.33	27.89	21.47	3.67	25.40	20.22	4.03
	67 (19.4)	38.75	26.48	2.45	36.81	25.59	2.73	34.73	24.61	3.02	32.51	23.58	3.34	30.08	22.45	3.69	27.36	21.16	4.06
	72 (22.2)	42.32	21.50	2.47	40.19	20.65	2.74	37.90	19.72	3.04	35.47	18.74	3.37	32.79	17.67	3.71	29.77	16.45	4.08
1200 / 0.11	57 (13.9)	35.80	35.80	2.49	34.24	34.24	2.76	32.54	32.54	3.06	30.71	30.71	3.38	28.69	28.69	3.73	26.39	26.39	4.10
	62 (16.7)	36.38	33.64	2.49	34.58	32.55	2.76	32.64	32.64	3.06	30.72	30.72	3.38	28.69	28.69	3.73	26.39	26.39	4.10
	63* (17.2)	36.74	27.00	2.50	34.86	26.09	2.77	32.83	25.08	3.06	30.68	24.01	3.38	28.34	22.84	3.73	25.74	21.56	4.09
	67 (19.4)	39.63	28.16	2.51	37.58	27.22	2.78	35.40	26.20	3.08	33.08	25.12	3.40	30.53	23.93	3.75	27.69	22.58	4.11
	72 (22.2)	43.25	22.51	2.53	41.00	21.61	2.80	38.60	20.65	3.10	36.05	19.63	3.42	33.25	18.51	3.77	30.11	17.24	4.14
1350 / 0.12	57 (13.9)	37.03	37.03	2.55	35.36	35.36	2.82	33.56	33.56	3.12	31.61	31.61	3.44	29.46	29.46	3.79	27.01	27.01	4.16
	62 (16.7)	37.21	35.56	2.55	35.38	35.38	2.82	33.56	33.56	3.12	31.61	31.61	3.44	29.46	29.46	3.79	27.01	27.01	4.16
	63* (17.2)	37.39	28.51	2.55	35.42	27.54	2.82	33.32	26.50	3.12	31.09	25.39	3.44	28.67	24.15	3.78	25.98	22.75	4.15
	67 (19.4)	40.30	29.77	2.57	38.17	28.78	2.84	35.89	27.73	3.13	33.48	26.60	3.46	30.85	25.34	3.80	27.92	23.90	4.17
	72 (22.2)	43.95	23.46	2.58	41.61	22.52	2.86	39.12	21.53	3.15	36.47	20.47	3.48	33.57	19.30	3.82	30.33	17.98	4.19

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

036 Heating Extended Performance Table -10-60 (-23.3-15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																					
		–10 (–23.3)			0 (–17.8)			10 (–12.2)			20 (–6.7)			30 (–1.1)			40 (4.4)			50 (10)			60 (15.6)		
EDB	CFM	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	1050	11.73	10.79	2.28	15.19	13.97	2.37	18.75	17.21	2.46	22.49	20.40	2.55	26.57	23.28	2.64	31.32	31.32	2.76	37.01	37.01	2.91	43.24	43.24	3.08
	1200	12.00	11.04	2.32	15.47	14.23	2.40	19.05	17.48	2.47	23.59	21.39	2.27	26.97	23.63	2.63	31.80	31.80	2.73	37.80	37.80	2.86	43.34	43.34	3.00
	1350	12.24	11.26	2.36	15.72	14.46	2.43	19.31	17.72	2.50	23.08	20.93	2.56	27.31	23.93	2.63	32.38	32.38	2.73	37.86	37.86	2.83	42.60	42.60	2.96
70 (21.1)	1050	11.19	10.30	2.38	14.74	13.57	2.48	18.38	16.87	2.58	22.16	20.10	2.67	26.17	22.93	2.77	30.86	30.86	2.90	36.34	36.34	3.05	42.74	42.74	3.23
	1200	11.47	10.55	2.41	15.03	13.83	2.50	18.68	17.14	2.59	22.48	20.38	2.67	26.55	23.26	2.76	31.33	31.33	2.87	37.15	37.15	3.00	42.95	42.95	3.15
	1350	11.71	10.77	2.45	15.29	14.07	2.54	18.94	17.39	2.61	22.76	20.64	2.68	26.89	23.56	2.76	31.74	31.74	2.86	37.56	37.56	2.97	42.55	42.55	3.11
75 (23.9)	1050	10.59	9.75	2.46	14.25	13.11	2.58	17.96	16.49	2.69	21.80	19.77	2.80	25.82	22.62	2.91	30.32	30.32	3.04	35.69	35.69	3.20	42.20	42.20	3.39
	1200	10.87	10.00	2.50	14.55	13.38	2.61	18.27	16.77	2.71	22.12	20.06	2.80	26.17	22.93	2.89	30.87	30.87	3.01	36.51	36.51	3.15	42.50	42.50	3.30
	1350	11.12	10.23	2.54	14.81	13.63	2.64	18.54	17.02	2.73	22.41	20.32	2.81	26.48	23.20	2.89	31.27	31.27	3.00	37.16	37.16	3.11	42.34	42.34	3.26

PERFORMANCE DATA (CONT)

042 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM / BF	EWB °F (°C)	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens	
1225 / 0.11	57 (13.9)	39.94	39.94	2.84	38.16	38.16	3.15	36.22	36.22	3.50	34.10	34.10	3.87	31.73	31.73	4.28	28.99	28.99	4.71
	62 (16.7)	41.11	36.17	2.85	38.98	34.98	3.16	36.71	33.68	3.51	34.30	32.21	3.88	31.74	31.74	4.28	28.99	28.99	4.71
	63* (17.2)	41.60	29.27	2.86	39.42	28.21	3.17	37.08	27.07	3.51	34.57	25.84	3.88	31.82	24.50	4.28	28.71	22.97	4.70
	67 (19.4)	44.73	30.39	2.90	42.36	29.30	3.22	39.80	28.14	3.56	37.07	26.89	3.93	34.05	25.51	4.32	30.64	23.94	4.74
	72 (22.2)	48.66	24.63	2.96	46.04	23.59	3.27	43.23	22.48	3.61	40.21	21.29	3.98	36.88	19.97	4.38	33.11	18.48	4.79
1400 / 0.12	57 (13.9)	41.58	41.58	2.91	39.65	39.65	3.22	37.54	37.54	3.57	35.26	35.26	3.94	32.70	32.70	4.35	29.75	29.75	4.77
	62 (16.7)	42.15	38.67	2.92	39.93	37.33	3.23	37.58	37.58	3.57	35.26	35.26	3.94	32.70	32.70	4.35	29.74	29.74	4.77
	63* (17.2)	42.55	31.08	2.92	40.24	29.96	3.23	37.77	28.76	3.57	35.14	27.47	3.94	32.26	26.06	4.34	29.01	24.43	4.76
	67 (19.4)	45.70	32.32	2.96	43.19	31.18	3.28	40.50	29.95	3.62	37.64	28.64	3.99	34.47	27.19	4.38	30.90	25.51	4.80
	72 (22.2)	49.66	25.79	3.02	46.91	24.70	3.33	43.97	23.54	3.67	40.82	22.30	4.04	37.33	20.92	4.43	33.44	19.38	4.85
1575 / 0.13	57 (13.9)	42.95	42.95	2.97	40.89	40.89	3.29	38.64	38.64	3.63	36.20	36.20	4.01	33.47	33.47	4.41	30.34	30.34	4.84
	62 (16.7)	43.02	43.02	2.97	40.89	40.89	3.29	38.64	38.64	3.63	36.20	36.20	4.01	33.47	33.47	4.41	30.34	30.34	4.84
	63* (17.2)	43.27	32.81	2.98	40.87	31.64	3.29	38.29	30.38	3.63	35.56	29.03	3.99	32.57	27.53	4.39	29.22	25.77	4.81
	67 (19.4)	46.44	34.17	3.02	43.82	32.97	3.33	41.01	31.69	3.67	38.05	30.33	4.04	34.76	28.78	4.44	31.10	26.99	4.85
	72 (22.2)	50.43	26.88	3.08	47.56	25.75	3.39	44.51	24.55	3.73	41.26	23.27	4.10	37.64	21.83	4.49	33.62	20.21	4.90

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

042 Heating Extended Performance Table -10-60 (-23.3-15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																					
		–10 (–23.3)			0 (–17.8)			10 (–12.2)			20 (–6.7)			30 (–1.1)			40 (4.4)			50 (10)			60 (15.6)		
EDB	CFM	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	1225	13.51	12.43	2.46	17.40	16.01	2.58	21.46	19.70	2.69	25.77	23.37	2.82	30.59	26.80	2.96	36.13	36.13	3.14	42.42	42.42	3.35	49.90	49.90	3.61
	1400	13.76	12.66	2.49	17.66	16.25	2.59	21.74	19.95	2.69	26.08	23.66	2.81	30.99	27.16	2.93	36.61	36.61	3.09	43.03	43.03	3.29	50.17	50.17	3.51
	1575	13.98	12.86	2.52	17.89	16.46	2.61	21.98	20.17	2.71	26.36	23.91	2.81	31.34	27.46	2.92	37.00	37.00	3.07	43.64	43.64	3.25	50.02	50.02	3.46
70 (21.1)	1225	12.97	11.93	2.58	16.94	15.58	2.70	21.06	19.33	2.83	25.39	23.02	2.97	30.16	26.42	3.12	35.61	35.61	3.30	41.80	41.80	3.52	49.25	49.25	3.79
	1400	13.21	12.16	2.61	17.21	15.83	2.72	21.34	19.59	2.83	25.71	23.32	2.95	30.53	26.75	3.09	36.09	36.09	3.25	42.39	42.39	3.45	49.66	49.66	3.69
	1575	13.44	12.37	2.64	17.44	16.05	2.74	21.59	19.82	2.84	25.98	23.57	2.95	30.86	27.04	3.07	36.48	36.48	3.23	42.89	42.89	3.42	49.65	49.65	3.63
75 (23.9)	1225	12.37	11.38	2.70	16.44	15.13	2.84	20.62	18.93	2.97	24.99	22.67	3.12	29.75	26.06	3.28	34.97	34.97	3.46	41.20	41.20	3.70	48.49	48.49	3.99
	1400	12.62	11.61	2.73	16.71	15.37	2.85	20.91	19.19	2.98	25.30	22.94	3.10	30.11	26.38	3.25	35.45	35.45	3.41	41.78	41.78	3.62	49.11	49.11	3.87
	1575	12.85	11.82	2.76	16.95	15.60	2.87	21.17	19.43	2.99	25.59	23.21	3.10	30.43	26.67	3.23	35.97	35.97	3.39	42.25	42.25	3.58	49.22	49.22	3.80

PERFORMANCE DATA (CONT)

048 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM / BF	EWB °F (°C)	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens	
1400 / 0.08	57 (13.9)	47.01	47.01	3.24	44.84	44.84	3.63	42.49	42.49	4.06	39.97	39.97	4.51	37.16	37.16	4.99	33.94	33.94	5.49
	62 (16.7)	48.48	41.71	3.24	45.86	40.29	3.64	43.09	38.75	4.06	40.20	37.02	4.51	37.17	37.17	4.99	33.93	33.93	5.49
	63* (17.2)	49.15	33.85	3.25	46.45	32.57	3.64	43.59	31.22	4.06	40.57	29.80	4.51	37.30	28.25	4.99	33.63	26.50	5.49
	67 (19.4)	52.83	35.11	3.25	49.88	33.81	3.65	46.73	32.41	4.07	43.45	30.97	4.53	39.85	29.37	5.01	35.81	27.57	5.51
	72 (22.2)	57.57	28.49	3.25	54.28	27.22	3.66	50.79	25.87	4.09	47.12	24.46	4.54	43.10	22.92	5.02	38.58	21.19	5.52
1600 / 0.10	57 (13.9)	48.95	48.95	3.30	46.57	46.57	3.69	44.01	44.01	4.12	41.28	41.28	4.57	38.25	38.25	5.05	34.77	34.77	5.55
	62 (16.7)	49.68	44.61	3.30	46.94	42.97	3.69	44.06	44.06	4.12	41.28	41.28	4.57	38.25	38.25	5.05	34.77	34.77	5.55
	63* (17.2)	50.24	35.94	3.30	47.38	34.60	3.70	44.36	33.17	4.12	41.19	31.68	4.57	37.76	30.04	5.05	33.94	28.18	5.55
	67 (19.4)	53.94	37.35	3.30	50.82	35.97	3.70	47.50	34.50	4.13	44.07	32.99	4.59	40.28	31.29	5.06	36.08	29.37	5.56
	72 (22.2)	58.71	29.82	3.31	55.23	28.49	3.71	51.56	27.08	4.14	47.71	25.61	4.60	43.51	24.00	5.08	38.73	22.16	5.57
1800 / 0.11	57 (13.9)	50.56	50.56	3.35	48.01	48.01	3.75	45.26	45.26	4.18	42.34	42.34	4.63	39.11	39.11	5.11	35.42	35.42	5.61
	62 (16.7)	50.66	50.66	3.35	48.01	48.01	3.75	45.26	45.26	4.18	42.34	42.34	4.63	39.11	39.11	5.11	35.42	35.42	5.61
	63* (17.2)	51.06	37.95	3.36	48.08	36.54	3.75	44.92	35.04	4.18	41.64	33.47	4.63	38.08	31.71	5.11	34.14	29.69	5.60
	67 (19.4)	54.78	39.49	3.36	51.51	38.05	3.76	48.05	36.51	4.19	44.48	34.91	4.64	40.56	33.10	5.12	36.20	31.01	5.62
	72 (22.2)	59.55	31.07	3.36	55.92	29.69	3.77	52.13	28.24	4.20	48.12	26.70	4.65	43.77	25.02	5.13	39.37	23.33	5.64

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

048 Heating Extended Performance Table -10-60 (-23.3-15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																					
		–10 (–23.3)			0 (–17.8)			10 (–12.2)			20 (–6.7)			30 (–1.1)			40 (4.4)			50 (10)			60 (15.6)		
EDB	CFM	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	1400	16.44	15.13	3.02	20.84	19.18	3.12	25.52	23.43	3.22	30.51	27.67	3.33	35.89	31.45	3.45	41.90	41.90	3.59	49.06	49.06	3.77	56.77	56.77	3.95
	1600	16.73	15.39	3.05	21.15	19.46	3.14	25.88	23.75	3.23	30.86	27.99	3.32	36.29	31.80	3.42	42.54	42.54	3.54	49.82	49.82	3.67	56.93	56.93	3.82
	1800	17.00	15.64	3.09	21.43	19.72	3.17	26.19	24.04	3.24	31.18	28.28	3.32	36.64	32.10	3.41	43.01	43.01	3.51	49.98	49.98	3.62	56.73	56.73	3.75
70 (21.1)	1400	15.87	14.60	3.15	20.34	18.72	3.27	25.03	22.97	3.38	30.09	27.29	3.50	35.46	31.07	3.63	41.32	41.32	3.78	48.38	48.38	3.97	56.17	56.17	4.16
	1600	16.16	14.87	3.18	20.66	19.01	3.29	25.39	23.30	3.39	30.46	27.62	3.49	35.87	31.43	3.60	41.85	41.85	3.72	49.21	49.21	3.87	56.40	56.40	4.03
	1800	16.43	15.11	3.22	20.94	19.26	3.31	25.71	23.59	3.40	30.79	27.92	3.49	36.22	31.74	3.59	42.32	42.32	3.69	49.53	49.53	3.81	56.34	56.34	3.96
75 (23.9)	1400	15.25	14.03	3.29	19.81	18.22	3.42	24.56	22.54	3.54	29.64	26.88	3.68	35.01	30.67	3.82	40.77	40.77	3.97	47.74	47.74	4.17	55.56	55.56	4.38
	1600	15.54	14.30	3.32	20.13	18.52	3.44	24.90	22.85	3.55	30.02	27.23	3.66	35.43	31.04	3.78	41.27	41.27	3.91	48.40	48.40	4.08	55.88	55.88	4.25
	1800	15.81	14.55	3.36	20.41	18.78	3.46	25.20	23.13	3.56	30.35	27.52	3.66	35.79	31.36	3.77	41.72	41.72	3.88	49.03	49.03	4.02	55.89	55.89	4.17

PERFORMANCE DATA (CONT)

060 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM / BF	EWB °F (°C)	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens		Total	Sens	
1750 / 0.12	57 (13.9)	58.60	58.60	3.94	55.29	55.29	4.41	51.87	51.87	4.94	48.29	48.29	5.52	44.45	44.45	6.15	40.24	40.24	6.83
	62 (16.7)	60.21	52.15	3.96	56.43	50.47	4.43	52.55	48.65	4.95	48.58	46.60	5.52	44.47	44.47	6.15	40.24	40.24	6.83
	63* (17.2)	60.88	42.10	3.96	57.01	40.67	4.43	52.99	39.04	4.95	48.87	37.41	5.52	44.50	35.56	6.15	39.78	33.46	6.82
	67 (19.4)	65.54	43.78	4.01	61.34	42.27	4.48	57.00	40.67	5.00	52.51	39.00	5.57	47.74	37.10	6.20	42.58	34.92	6.87
	72 (22.2)	71.35	35.37	4.07	66.70	33.93	4.54	61.92	32.40	5.06	56.94	30.75	5.63	51.67	28.95	6.25	45.97	26.86	6.92
2000 / 0.13	57 (13.9)	60.94	60.94	4.05	57.41	57.41	4.52	53.74	53.74	5.04	49.91	49.91	5.62	45.81	45.81	6.25	41.30	41.30	6.93
	62 (16.7)	61.69	55.65	4.05	57.79	53.77	4.52	53.82	53.82	5.05	49.91	49.91	5.62	45.81	45.81	6.25	41.30	41.30	6.93
	63* (17.2)	62.19	44.67	4.06	58.13	43.14	4.53	53.95	41.45	5.05	49.64	39.68	5.62	45.10	37.77	6.24	40.21	35.53	6.92
	67 (19.4)	66.90	46.52	4.11	62.50	44.94	4.58	57.96	43.26	5.10	53.27	41.44	5.67	48.31	39.48	6.29	42.96	37.11	6.96
	72 (22.2)	72.75	37.00	4.17	67.90	35.50	4.64	62.92	33.90	5.16	57.74	32.17	5.73	52.26	30.26	6.35	46.35	28.12	7.01
2250 / 0.14	57 (13.9)	62.90	62.90	4.15	59.16	59.16	4.62	55.27	55.27	5.15	51.22	51.22	5.73	46.87	46.87	6.36	42.10	42.10	7.03
	62 (16.7)	63.01	63.01	4.15	59.16	59.16	4.62	55.28	55.28	5.15	51.22	51.22	5.73	46.87	46.87	6.36	42.10	42.10	7.03
	63* (17.2)	63.19	47.09	4.15	58.98	45.48	4.62	54.66	43.80	5.14	50.21	41.90	5.71	45.53	39.80	6.34	40.51	37.46	7.01
	67 (19.4)	67.92	49.16	4.20	63.36	47.50	4.67	58.67	45.74	5.19	53.81	43.83	5.76	48.70	41.68	6.38	43.20	39.27	7.05
	72 (22.2)	73.82	38.53	4.26	68.80	36.97	4.73	63.65	35.31	5.25	58.30	33.51	5.82	52.67	31.54	6.44	46.59	29.30	7.10

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

060 Heating Extended Performance Table -10-60 (-23.3-15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																					
		–10 (–23.3)			0 (–17.8)			10 (–12.2)			20 (–6.7)			30 (–1.1)			40 (4.4)			50 (10)			60 (15.6)		
EDB	CFM	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW	Capacity MBtuh		Total Sys KW
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	1750	20.22	18.60	3.60	25.38	23.35	3.71	30.81	28.28	3.83	36.70	33.28	3.96	43.20	37.86	4.12	50.69	50.69	4.31	59.27	59.27	4.53	68.07	68.07	4.79
	2000	20.60	18.95	3.65	25.77	23.72	3.75	31.22	28.66	3.85	37.17	33.71	3.97	43.77	38.35	4.10	51.37	51.37	4.27	59.59	59.59	4.44	67.77	67.77	4.66
	2250	20.94	19.27	3.71	26.13	24.05	3.80	31.64	29.04	3.89	37.60	34.10	3.99	44.27	38.79	4.11	52.14	52.14	4.25	59.32	59.32	4.41	65.91	65.91	4.57
70 (21.1)	1750	19.58	18.02	3.78	24.85	22.86	3.90	30.34	27.85	4.03	36.22	32.85	4.17	42.74	37.45	4.33	50.07	50.07	4.53	58.54	58.54	4.76	67.38	67.38	5.03
	2000	19.97	18.37	3.83	25.25	23.23	3.94	30.76	28.23	4.05	36.71	33.29	4.17	43.27	37.91	4.31	50.72	50.72	4.48	59.05	59.05	4.67	67.36	67.36	4.90
	2250	20.31	18.69	3.89	25.61	23.57	3.98	31.14	28.58	4.08	37.14	33.68	4.19	43.73	38.32	4.31	51.37	51.37	4.47	59.01	59.01	4.63	66.12	66.12	4.81
75 (23.9)	1750	18.88	17.37	3.95	24.26	22.32	4.09	29.84	27.39	4.23	35.72	32.40	4.38	42.24	37.01	4.55	49.27	49.27	4.75	57.69	57.69	5.01	66.69	66.69	5.28
	2000	19.27	17.73	4.01	24.67	22.70	4.13	30.27	27.78	4.25	36.21	32.84	4.38	42.78	37.48	4.53	49.95	49.95	4.70	58.48	58.48	4.90	66.85	66.85	5.14
	2250	19.62	18.05	4.07	25.04	23.04	4.17	30.65	28.13	4.28	36.65	33.24	4.40	43.25	37.89	4.53	50.66	50.66	4.69	58.60	58.60	4.86	66.06	66.06	5.06

LEGEND

BF	— Bypass Factor
edb	— Entering Dry–Bulb
Ewb	— Entering Wet–Bulb
kW	— Total Unit Power Input
SHC	— Sensible Heat Capacity (1000 Btuh)
TC	— Total Capacity (1000 Btuh) (net)
rh	—Relative Humidity

COOLING NOTES:

1. Ratings are net; they account for the effects of the evaporator–fan motor power and heat.
2. Direct interpolation is permissible. Do not extrapolate.
3. The following formulas may be used:

$$^{t}ldb = {}^{t}edb - \frac{\text{Sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$$^{t}lwb = \text{Wet–bulb temperature corresponding to enthalpy air leaving evaporator coil } (^{h}lwb)$$

$$^{h}lwb = {}^{h}ewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: ^{h}ewb = Enthalpy of air entering evaporator coil

4. The SHC is based on 80°F (26.7 °C) edb temperature of air entering evaporator coil. Below 80°F (26.7°C) edb, subtract (corr factor x cfm) from SHC. Above 80°F (26.7°C) edb, add (corr factor x cfm) to SHC. Correction Factor = 1.10 x (1 + BF) x (edb + 80).

5. Integrated capacity is maximum (instantaneous) capacity less the effect of frost on the outdoor coil and the heat required to defrost it.

PERFORMANCE DATA (CONT)

Economizer 1-in. Filter Pressure Drop (IN. W.C.)

UNIT48EZ	PRESSURE DROP
024-036	0.20
042-060	0.25

Filter Pressure Drop Table (IN. W.C.)

FILTER SIZE in. (mm)	CFM																	
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
20X20X1 (508X508X25)	0.07	0.08	0.10	0.12	0.13	0.14	0.15	—	—	—	—	—	—	—	—	—	—	—
20X24X1 (508X610x25)	—	—	—	0.09	0.10	0.11	0.13	0.14	0.15	0.16	—	—	—	—	—	—	—	—
24X30X1 (610X762x25)	—	—	0.04	0.05	0.06	0.07	0.07	0.08	0.09	0.10	—	—	—	—	—	—	—	—
24X36X1 (610X914X25)	—	—	—	—	—	—	0.06	0.07	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.13	0.14	0.14

Dry Coil Air Delivery* - Horizontal and Downflow Discharge - Unit 48EZ024-060 Series 1

Unit	Heating Rise Range	Motor Speed	Wire Color		External Static Pressure (IN. W.C.)								
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
48EZ(–,N)024040	30 – 60ºF (17 – 33ºC)	Low	Blue	CFM	741	638	547	415	– –	– –	– –	– –	– –
				Heating Rise (ºF)	41	47	55	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	23	26	31	NA	NA	NA	NA	NA	NA
		Med–Low[2]	Pink	CFM	898	820	738	662	536	– –	– –	– –	– –
				Heating Rise (ºF)	34	37	41	46	56	NA	NA	NA	NA
				Heating Rise (ºC)	19	20	23	25	31	NA	NA	NA	NA
		Medium[1]	Red	CFM	973	887	823	733	665	538	451	– –	– –
				Heating Rise (ºF)	31	34	37	41	45	56	NA	NA	NA
				Heating Rise (ºC)	17	19	20	23	25	31	NA	NA	NA
		Med–High	Orange	CFM	1140	1064	996	915	840	758	687	564	480
				Heating Rise (ºF)	NA	NA	30	33	36	40	44	54	NA
				Heating Rise (ºC)	NA	NA	17	18	20	22	24	30	NA
		High	Black	CFM	1202	1140	1082	1015	961	881	810	732	631
				Heating Rise (ºF)	NA	NA	NA	30	31	34	37	41	48
				Heating Rise (ºC)	NA	NA	NA	17	17	19	21	23	27
48EZ(–,N)024060	25 – 55ºF (14 – 31ºC)	Low	Blue	CFM	741	638	547	415	– –	– –	– –	– –	– –
				Heating Rise (ºF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Med–Low[2]	Pink	CFM	898	820	738	662	536	– –	– –	– –	– –
				Heating Rise (ºF)	49	54	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	27	30	NA	NA	NA	NA	NA	NA	NA
		Medium	Red	CFM	973	887	823	733	665	538	451	– –	– –
				Heating Rise (ºF)	46	50	54	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	25	28	30	NA	NA	NA	NA	NA	NA
		Med–High	Orange	CFM	1140	1064	996	915	840	758	687	564	480
				Heating Rise (ºF)	39	42	45	49	53	NA	NA	NA	NA
				Heating Rise (ºC)	22	23	25	27	29	NA	NA	NA	NA
		High[1]	Black	CFM	1202	1140	1082	1015	961	881	810	732	631
				Heating Rise (ºF)	37	39	41	44	46	50	55	NA	NA
				Heating Rise (ºC)	21	22	23	24	26	28	30	NA	NA

Dry Coil Air Delivery* - Horizontal and Downflow Discharge-Unit 48EZ024-060 Series 1

Unit	Heating Rise Range	Motor Speed	Wire Color		External Static Pressure (IN. W.C.)								
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
48EZ(−,N)030040	30 − 60ºF (17 − 33ºC)	Low	Blue	CFM	741	638	547	415	−−	−−	−−	−−	−−
				Heating Rise (ºF)	41	47	55	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	23	26	31	NA	NA	NA	NA	NA	NA
		Med−Low	Pink	CFM	898	820	738	662	536	−−	−−	−−	−−
				Heating Rise (ºF)	34	37	41	46	56	NA	NA	NA	NA
				Heating Rise (ºC)	19	20	23	25	31	NA	NA	NA	NA
		Medium[1]	Red	CFM	973	887	823	733	665	538	451	−−	−−
				Heating Rise (ºF)	31	34	37	41	45	56	NA	NA	NA
				Heating Rise (ºC)	17	19	20	23	25	31	NA	NA	NA
		Med−High[2]	Orange	CFM	1140	1064	996	915	840	758	687	564	480
				Heating Rise (ºF)	NA	NA	30	33	36	40	44	54	NA
				Heating Rise (ºC)	NA	NA	17	18	20	22	24	30	NA
		High	Black	CFM	1202	1140	1082	1015	961	881	810	732	631
				Heating Rise (ºF)	NA	NA	NA	30	31	34	37	41	48
				Heating Rise (ºC)	NA	NA	NA	17	17	19	21	23	27
48EZ(−,N)030060	25 − 55ºF (14 − 31ºC)	Low	Blue	CFM	741	638	547	415	−−	−−	−−	−−	−−
				Heating Rise (ºF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Med−Low	Pink	CFM	898	820	738	662	536	−−	−−	−−	−−
				Heating Rise (ºF)	49	54	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	27	30	NA	NA	NA	NA	NA	NA	NA
		Medium	Red	CFM	973	887	823	733	665	538	451	−−	−−
				Heating Rise (ºF)	46	50	54	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	25	28	30	NA	NA	NA	NA	NA	NA
		Med−High[2]	Orange	CFM	1140	1064	996	915	840	758	687	564	480
				Heating Rise (ºF)	39	42	45	49	53	NA	NA	NA	NA
				Heating Rise (ºC)	22	23	25	27	29	NA	NA	NA	NA
		High[1]	Black	CFM	1202	1140	1082	1015	961	881	810	732	631
				Heating Rise (ºF)	37	39	41	44	46	50	55	NA	NA
				Heating Rise (ºC)	21	22	23	24	26	28	30	NA	NA
48EZ(−,N)036060	25 − 55ºF (14 − 31ºC)	Low[1]	Blue	CFM	1206	1151	1085	1033	961	901	839	769	694
				Heating Rise (ºF)	37	39	41	43	46	49	53	NA	NA
				Heating Rise (ºC)	20	21	23	24	26	27	29	NA	NA
		Med−Low[2]	Pink	CFM	1369	1317	1262	1208	1152	1095	1037	979	919
				Heating Rise (ºF)	32	34	35	37	39	41	43	45	48
				Heating Rise (ºC)	18	19	20	20	21	23	24	25	27
		Medium	Red	CFM	1419	1370	1315	1269	1209	1161	1101	1043	984
				Heating Rise (ºF)	31	32	34	35	37	38	40	43	45
				Heating Rise (ºC)	17	18	19	19	20	21	22	24	25
		Med−High	Orange	CFM	1557	1507	1464	1412	1365	1310	1265	1212	1154
				Heating Rise (ºF)	29	29	30	31	33	34	35	37	39
				Heating Rise (ºC)	16	16	17	17	18	19	20	20	21
		High	Black	CFM	1599	1553	1505	1460	1410	1361	1310	1262	1203
				Heating Rise (ºF)	28	29	30	30	32	33	34	35	37
				Heating Rise (ºC)	15	16	16	17	18	18	19	20	21

Dry Coil Air Delivery* - Horizontal and Downflow Discharge-Unit 48EZ024-060 Series 1

Unit	Heating Rise Range	Motor Speed	Wire Color		External Static Pressure (IN. W.C.)								
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
48EZ(−,N)036090	35 − 65ºF (19 − 36ºC)	Low	Blue	CFM	1206	1151	1085	1033	961	901	839	769	694
				Heating Rise (ºF)	56	59	63	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	31	33	35	NA	NA	NA	NA	NA	NA
		Med−Low[2]	Pink	CFM	1369	1317	1262	1208	1152	1095	1037	979	919
				Heating Rise (ºF)	50	52	54	56	59	62	NA	NA	NA
				Heating Rise (ºC)	28	29	30	31	33	35	NA	NA	NA
		Medium	Red	CFM	1419	1370	1315	1269	1209	1161	1101	1043	984
				Heating Rise (ºF)	48	50	52	54	56	59	62	65	NA
				Heating Rise (ºC)	27	28	29	30	31	33	34	36	NA
		Med−High	Orange	CFM	1557	1507	1464	1412	1365	1310	1265	1212	1154
				Heating Rise (ºF)	44	45	46	48	50	52	54	56	59
				Heating Rise (ºC)	24	25	26	27	28	29	30	31	33
		High[1]	Black	CFM	1599	1553	1505	1460	1410	1361	1310	1262	1203
				Heating Rise (ºF)	43	44	45	47	48	50	52	54	57
				Heating Rise (ºC)	24	24	25	26	27	28	29	30	31
48EZ(−,N)042060	25 − 55ºF (14 − 31ºC)	Low[1]	Blue	CFM	1295	1234	1182	1126	1075	1016	955	898	857
				Heating Rise (ºF)	34	36	38	39	41	44	47	49	52
				Heating Rise (ºC)	19	20	21	22	23	24	26	27	29
		Med−Low	Pink	CFM	1345	1282	1235	1194	1140	1095	1027	974	921
				Heating Rise (ºF)	33	35	36	37	39	41	43	46	48
				Heating Rise (ºC)	18	19	20	21	22	23	24	25	27
		Medium	Red	CFM	1505	1452	1413	1358	1323	1282	1234	1169	1130
				Heating Rise (ºF)	30	31	31	33	34	35	36	38	39
				Heating Rise (ºC)	16	17	17	18	19	19	20	21	22
		Med−High[2]	Orange	CFM	1545	1492	1449	1411	1362	1313	1278	1231	1188
				Heating Rise (ºF)	29	30	31	31	33	34	35	36	37
				Heating Rise (ºC)	16	17	17	17	18	19	19	20	21
		High	Black	CFM	1705	1643	1607	1568	1518	1483	1448	1404	1360
				Heating Rise (ºF)	26	27	28	28	29	30	31	32	33
				Heating Rise (ºC)	14	15	15	16	16	17	17	18	18
48EZ(−,N)042090	35 − 65ºF (19 − 36ºC)	Low	Blue	CFM	1295	1234	1182	1126	1075	1016	955	898	857
				Heating Rise (ºF)	53	55	58	60	63	NA	NA	NA	NA
				Heating Rise (ºC)	29	31	32	34	35	NA	NA	NA	NA
		Med−Low	Pink	CFM	1345	1282	1235	1194	1140	1095	1027	974	921
				Heating Rise (ºF)	51	53	55	57	60	62	NA	NA	NA
				Heating Rise (ºC)	28	29	31	32	33	35	NA	NA	NA
		Medium[1]	Red	CFM	1505	1452	1413	1358	1323	1282	1234	1169	1130
				Heating Rise (ºF)	45	47	48	50	51	53	55	58	60
				Heating Rise (ºC)	25	26	27	28	29	29	31	32	33
		Med−High[2]	Orange	CFM	1545	1492	1449	1411	1362	1313	1278	1231	1188
				Heating Rise (ºF)	44	46	47	48	50	52	53	55	57
				Heating Rise (ºC)	24	25	26	27	28	29	30	31	32
		High	Black	CFM	1705	1643	1607	1568	1518	1483	1448	1404	1360
				Heating Rise (ºF)	40	41	42	43	45	46	47	48	50
				Heating Rise (ºC)	22	23	24	24	25	25	26	27	28

Dry Coil Air Delivery* - Horizontal and Downflow Discharge-Unit 48EZ024-060 Series 1

Unit	Heating Rise Range	Motor Speed	Wire Color		External Static Pressure (IN. W.C.)								
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
48EZ(−,N)048090	35 − 65ºF (19 − 36ºC)	Low[1]	Blue	CFM	1445	1389	1341	1281	1236	1189	1139	1072	1027
				Heating Rise (ºF)	47	49	51	53	55	57	60	63	NA
				Heating Rise (ºC)	26	27	28	29	31	32	33	35	NA
		Med−Low[2]	Pink	CFM	1678	1635	1602	1558	1513	1474	1438	1404	1349
				Heating Rise (ºF)	41	42	42	44	45	46	47	48	50
				Heating Rise (ºC)	23	23	24	24	25	26	26	27	28
		Medium	Red	CFM	1962	1915	1880	1843	1794	1753	1711	1675	1628
				Heating Rise (ºF)	35	36	36	37	38	39	40	41	42
				Heating Rise (ºC)	19	20	20	20	21	22	22	23	23
		Med−High	Orange	CFM	2131	2088	2065	2013	1982	1941	1888	1860	1785
				Heating Rise (ºF)	NA	NA	NA	NA	NA	35	36	37	38
				Heating Rise (ºC)	NA	NA	NA	NA	NA	19	20	20	21
		High	Black	CFM	2461	2409	2339	2286	2192	2140	2062	1968	1874
				Heating Rise (ºF)	NA	NA	NA	NA	NA	NA	NA	35	36
				Heating Rise (ºC)	NA	NA	NA	NA	NA	NA	NA	19	20
48EZ(−,N)048115	30 − 60ºF (17 − 33ºC)	Low	Blue	CFM	1445	1389	1341	1281	1236	1189	1139	1072	1027
				Heating Rise (ºF)	60	NA	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	33	NA	NA	NA	NA	NA	NA	NA	NA
		Med−Low[2]	Pink	CFM	1678	1635	1602	1558	1513	1474	1438	1404	1349
				Heating Rise (ºF)	52	53	54	56	57	59	60	NA	NA
				Heating Rise (ºC)	29	30	30	31	32	33	34	NA	NA
		Medium	Red	CFM	1962	1915	1880	1843	1794	1753	1711	1675	1628
				Heating Rise (ºF)	44	45	46	47	48	50	51	52	53
				Heating Rise (ºC)	25	25	26	26	27	28	28	29	30
		Med−High[1]	Orange	CFM	2131	2088	2065	2013	1982	1941	1888	1860	1785
				Heating Rise (ºF)	41	42	42	43	44	45	46	47	49
				Heating Rise (ºC)	23	23	23	24	24	25	26	26	27
		High	Black	CFM	2461	2409	2339	2286	2192	2140	2062	1968	1874
				Heating Rise (ºF)	35	36	37	38	40	41	42	44	46
				Heating Rise (ºC)	20	20	21	21	22	23	23	25	26
48EZ(−,N)048130	35 − 65ºF (19 − 36ºC)	Low	Blue	CFM	1445	1389	1341	1281	1236	1189	1139	1072	1027
				Heating Rise (ºF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Med−Low[2]	Pink	CFM	1678	1635	1602	1558	1513	1474	1438	1404	1349
				Heating Rise (ºF)	57	59	60	62	64	65	NA	NA	NA
				Heating Rise (ºC)	32	33	33	34	35	36	NA	NA	NA
		Medium	Red	CFM	1962	1915	1880	1843	1794	1753	1711	1675	1628
				Heating Rise (ºF)	49	50	51	52	54	55	56	57	59
				Heating Rise (ºC)	27	28	28	29	30	31	31	32	33
		Med−High[1]	Orange	CFM	2131	2088	2065	2013	1982	1941	1888	1860	1785
				Heating Rise (ºF)	45	46	47	48	49	50	51	52	54
				Heating Rise (ºC)	25	26	26	27	27	28	28	29	30
		High	Black	CFM	2461	2409	2339	2286	2192	2140	2062	1968	1874
				Heating Rise (ºF)	39	40	41	42	44	45	47	49	51
				Heating Rise (ºC)	22	22	23	23	24	25	26	27	29

Dry Coil Air Delivery* - Horizontal and Downflow Discharge-Unit 48EZ024-060 Series 1

Unit	Heating Rise Range	Motor Speed	Wire Color		External Static Pressure (IN. W.C.)								
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
48EZ(−,N)060090	35 − 65ºF (19 − 36ºC)	Low[1]	Blue	CFM	1448	1362	1296	1226	1168	1108	1071	998	905
				Heating Rise (ºF)	47	50	52	55	58	61	63	NA	NA
				Heating Rise (ºC)	26	28	29	31	32	34	35	NA	NA
		Med−Low	Pink	CFM	1722	1675	1614	1543	1499	1442	1408	1356	1308
				Heating Rise (ºF)	39	41	42	44	45	47	48	50	52
				Heating Rise (ºC)	22	23	23	24	25	26	27	28	29
		Medium[2]	Red	CFM	1887	1847	1783	1726	1677	1625	1578	1527	1432
				Heating Rise (ºF)	36	37	38	39	41	42	43	45	47
				Heating Rise (ºC)	20	20	21	22	23	23	24	25	26
		Med−High	Orange	CFM	2055	2008	1958	1927	1900	1768	1685	1581	1458
				Heating Rise (ºF)	NA	NA	35	35	36	38	40	43	47
				Heating Rise (ºC)	NA	NA	19	20	20	21	22	24	26
		High	Black	CFM	2292	2238	2158	2049	1935	1840	1732	1635	1513
				Heating Rise (ºF)	NA	NA	NA	NA	35	37	39	42	45
				Heating Rise (ºC)	NA	NA	NA	NA	20	21	22	23	25
48EZ(−,N)060115	30 − 60ºF (17 − 33ºC)	Low	Blue	CFM	1448	1362	1296	1226	1168	1108	1071	998	905
				Heating Rise (ºF)	60	NA	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	33	NA	NA	NA	NA	NA	NA	NA	NA
		Med−Low	Pink	CFM	1722	1675	1614	1543	1499	1442	1408	1356	1308
				Heating Rise (ºF)	50	52	54	56	58	60	NA	NA	NA
				Heating Rise (ºC)	28	29	30	31	32	33	NA	NA	NA
		Medium[2]	Red	CFM	1887	1847	1783	1726	1677	1625	1578	1527	1432
				Heating Rise (ºF)	46	47	49	50	52	53	55	57	NA
				Heating Rise (ºC)	26	26	27	28	29	30	31	32	NA
		Med−High[1]	Orange	CFM	2055	2008	1958	1927	1900	1768	1685	1581	1458
				Heating Rise (ºF)	42	43	44	45	46	49	52	55	60
				Heating Rise (ºC)	23	24	25	25	25	27	29	31	33
		High	Black	CFM	2292	2238	2158	2049	1935	1840	1732	1635	1513
				Heating Rise (ºF)	38	39	40	42	45	47	50	53	57
				Heating Rise (ºC)	21	22	22	24	25	26	28	30	32
48EZ(−,N)060130	35 − 65ºF (19 − 36ºC)	Low	Blue	CFM	1448	1321	1282	1235	1192	1145	1101	1057	1011
				Heating Rise (ºF)	NA	NA	NA	NA	NA	NA	NA	NA	NA
				Heating Rise (ºC)	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Med−Low	Pink	CFM	1722	1675	1614	1543	1499	1442	1408	1356	1308
				Heating Rise (ºF)	56	57	60	62	64	NA	NA	NA	NA
				Heating Rise (ºC)	31	32	33	35	36	NA	NA	NA	NA
		Medium[2]	Red	CFM	1887	1847	1783	1726	1677	1625	1578	1527	1432
				Heating Rise (ºF)	51	52	54	56	57	59	61	63	NA
				Heating Rise (ºC)	28	29	30	31	32	33	34	35	NA
		Med−High[1]	Orange	CFM	2055	2008	1958	1927	1900	1768	1685	1581	1458
				Heating Rise (ºF)	47	48	49	50	51	54	57	61	NA
				Heating Rise (ºC)	26	27	27	28	28	30	32	34	NA
		High	Black	CFM	2292	2238	2158	2049	1935	1840	1732	1635	1513
				Heating Rise (ºF)	42	43	45	47	50	52	56	59	64
				Heating Rise (ºC)	23	24	25	26	28	29	31	33	35

* Air delivery values are without air filter and are for dry coil (See 48EZ Wet Coil Pressure Drop table).

[1] Factory−shipped heating speed

[2] Factory−shipped cooling speed

NA − Not allowed for heating speed

Note: Deduct field−supplied air filter pressure drop and wet coil pressure drop to obtain external static pressure available for ducting.

Wet Coil Air Delivery 48EZ036-060 - Downflow Discharge - High Speed

Unit		External Static Pressure (IN. W.C.)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
48EZ036	CFM	1527	1466	1401	1339	1274	1228	1187	1142	1098	1065
48EZ042	CFM	1630	1593	1556	1526	1487	1442	1405	1365	1322	1288
48EZ048	CFM	2286	2222	2144	2068	1986	1905	1820	1737	1635	1531
48EZ060	CFM	2113	2049	1979	1911	1840	1771	1681	1614	1524	1418

* Air delivery values are without air filter and are for wet coil.

Note: Deduct field–supplied air filter pressure drop to obtain external static pressure available for ducting.

Maximum Discharge Air Temperature Rise

COOLING SIZE	HEATING SIZE (BTUH)	MAX DISCH. TEMP °F (°C)
024	40,000	170 (76.7)
024	60,000	170 (76.7)
030	40,000	170 (76.7)
030	60,000	170 (76.7)
036	60,000	170 (76.7)
036	90,000	165 (73.9)
042	60,000	170 (76.7)
042	90,000	175 (79.4)
048	90,000	175 (79.4)
048	115,000	175 (79.4)
048	130,000	165 (73.9)
060	90,000	175 (79.4)
060	115,000	175 (79.4)
060	130,000	165 (73.9)

High Altitude Compensation Natural Gas Only
Orifice Conversion—3.5 IN. W.C. Manifold Pressure

ALTITUDE ft (m)	INPUT (Btuh)*	ORIFICE NUMBER†
0–2000 (0–610)	40,000	#44
	60,000	#38
	90,000	#38
	115,000	#33
	130,000	#31
2001–4500 (610–1372)	32,800	#48
	49,200	#42
	73,800	#42
	94,300	#36
	106,600	#33

*In the U.S.A., the input rating for altitudes above 2,000 ft (610 m) must be reduced by 4% for each 1,000 ft () above sea level. In Canada, the input rating for altitudes from 2,000 to 4,500 ft () above sea level must be derated 10% by an authorized Gas Conversion Station or Dealer.

†Orifices available through your distributor.

Propane Gas Only
Orifice Conversion—10.0 IN. W.C. Manifold Pressure

ALTITUDE ft (m)	INPUT (Btuh)*	ORIFICE NUMBER†
0–2000 (0–610)	38,000	#55
	53,000	#53
	79,000	#53
	103,000	#51
	116,000	#49
2001–4500 (610–1372)	31,700	#56
	45,700	#54
	68,600	#54
	82,800	#53
	100,800	#52

*In the U.S.A., the input rating for altitudes above 2,000 ft (610 m) must be reduced by 4% for each 1,000 ft (305 m) above sea level. In Canada, the input rating for altitudes from 2,000 to 4,500 ft (610 to 1372 m) above sea level must be derated 10% by an authorized Gas Conversion Station or Dealer.

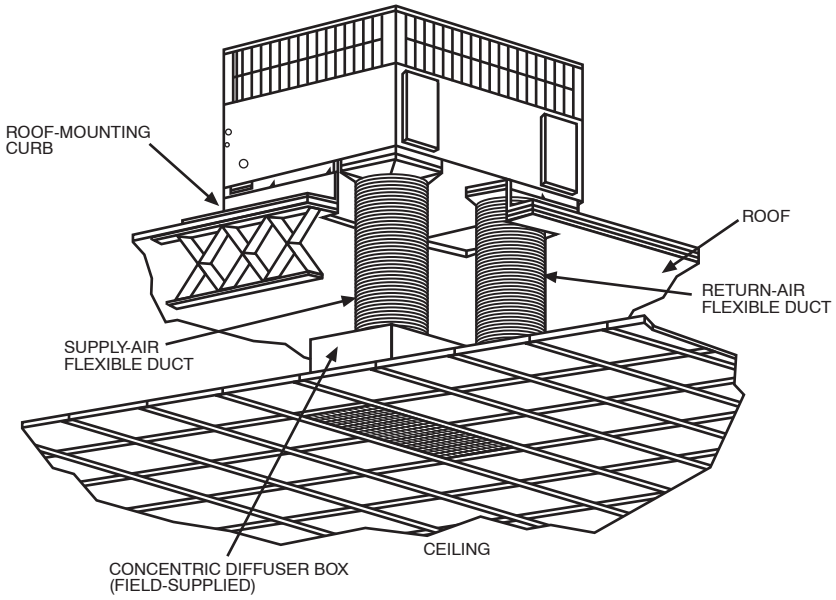
†Orifices available through your distributor.

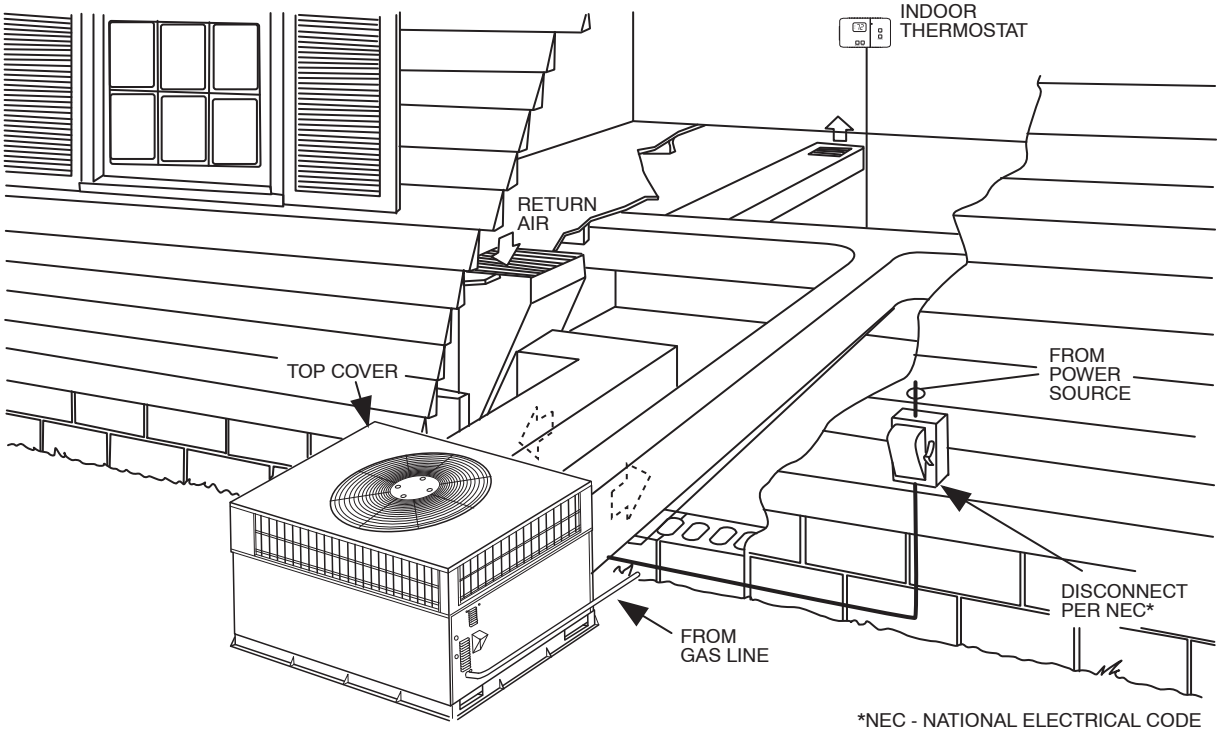
Wet Coil Pressure Drop

Unit Size	Standard CFM (S.C.F.M)														
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
024	0.06	0.07	0.08	0.09	0.1										
030			0.12	0.15	0.19	0.23	0.27								
036					0.07	0.11	0.18	0.26	0.35						
042							0.04	0.07	0.1	0.15	0.21				
048									0.11	0.14	0.17	0.22	0.28		
060											0.1	0.17	0.23	0.31	0.36

TYPICAL PIPING AND WIRING

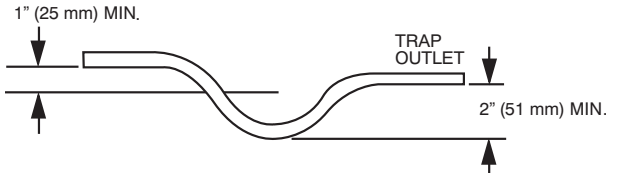
VERTICAL DISCHARGE





APPLICATION DATA

Condensate trap — A 2-in. (51 mm) condensate trap must be field supplied.



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Ductwork — Secure downflow discharge ductwork to roof curb. For horizontal discharge applications, attach ductwork to unit with flanges.

To convert a unit to downflow discharge — Units are equipped with factory-installed inserts in the down-flow openings. Removal of the inserts is similar to removing an electrical knock-out. The unit is factory equipped with duct covers to seal the horizontal discharge openings in the unit. Units installed in horizontal discharge orientation do not require duct covers.

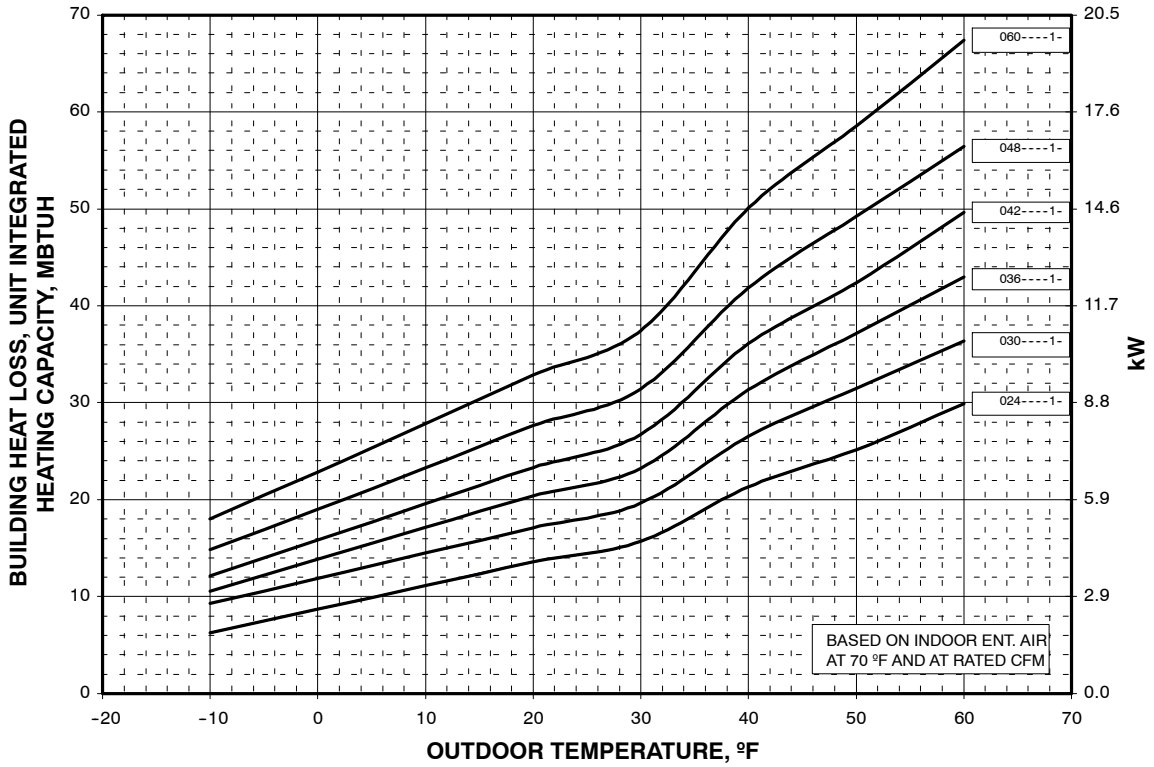
Maximum cooling airflow — To minimize the possibility of condensate blow-off from the evaporator, airflow through the units should not exceed 450 cfm per ton.

Minimum cooling airflow — Minimum cooling airflow is 350 cfm per ton in cooling mode. Airflow can be lower in certain modes when humidity removal is an issue.

Minimum ambient cooling operation temperature — All standard units have a minimum ambient cooling operating temperature of 55°F (12.8°C). With accessory low ambient temperature kit, units can operate at temperatures down to 0°F (-17.8°C).

Maximum operating outdoor air temperature for cooling is 125°F (51.7°C).

BALANCE POINT WORKSHEET



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ELECTRICAL DATA

48EZ Electrical Data

UNIT	NOMINAL V–PH–HZ	VOLTAGE RANGE		COMPRESSOR		OFM	IFM	POWER SUPPLY	
		MIN	MAX	RLA	LRA	FLA	FLA	MCA	MOCP
48EZ(–,N)024– – –311	208/230–1–60	187	253	12.8	58.3	0.5	4.1	20.6	30
48EZ(–,N)030– – –311	208/230–1–60	187	253	16.0	77.0	0.9	4.1	25.0	40
48EZ(–,N)036– – –311	208/230–1–60	187	253	16.7	79.0	0.9	6.0	27.7	40
48EZ(–,N)042– – –311	208/230–1–60	187	253	20.2	112.0	0.9	6.0	32.2	50
48EZ(–,N)048– – –311	208/230–1–60	187	253	21.8	117.0	1.5	7.6	36.3	50
48EZ(–,N)060– – –311	208/230–1–60	187	253	26.4	134.0	1.5	7.6	42.1	60
48EZ(–,N)030– – –511	208/230–3–60	187	253	10.0	71.0	0.9	4.1	17.5	25
48EZ(–,N)036– – –511	208/230–3–60	187	253	10.4	88.0	0.9	6.0	20.0	30
48EZ(–,N)042– – –511	208/230–3–60	187	253	13.5	88.0	0.9	6.0	23.7	35
48EZ(–,N)048– – –511	208/230–3–60	187	253	14.1	83.1	1.5	7.6	26.7	40
48EZ(–,N)060– – –511	208/230–3–60	187	253	16.0	110.0	1.5	7.6	29.1	40

LEGEND

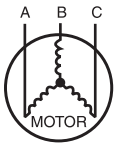
FLA -- Full Load Amps
LRA -- Locked Rotor Amps
MCA -- Minimum Circuit Amps
MOCP -- Maximum Overcurrent Protection
RLA -- Rated Load Amps

NOTES:
1. In compliance with NEC (National Electrical Code) requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be Power Supply fuse. The CGA (Canadian Gas Association) units may be fuse or circuit breaker.
2. Minimum wire size is based on 60 C copper wire. If other than 60 C wire is used, or if length exceeds wire length in table, determine size from NEC.
3. Unbalanced 3-Phase Supply Voltage
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance

   % Voltage imbalance

   $$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

EXAMPLE: Supply voltage is 230-3-60.



AB = 228 v
BC = 231 v
AC = 227 v

$$\text{Average Voltage} = \frac{228 + 231 + 227}{3}$$

$$= \frac{686}{3}$$

$$= 229$$

Determine maximum deviation from average voltage.
(AB) 229 - 228 = 1 v
(BC) 231 - 229 = 2 v
(AC) 229 - 227 = 2 v

Maximum deviation is 2 v.

Determine percent of voltage imbalance

$$\% \text{ Voltage Imbalance} = 100 \times \frac{2}{229}$$

$$= 0.8\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

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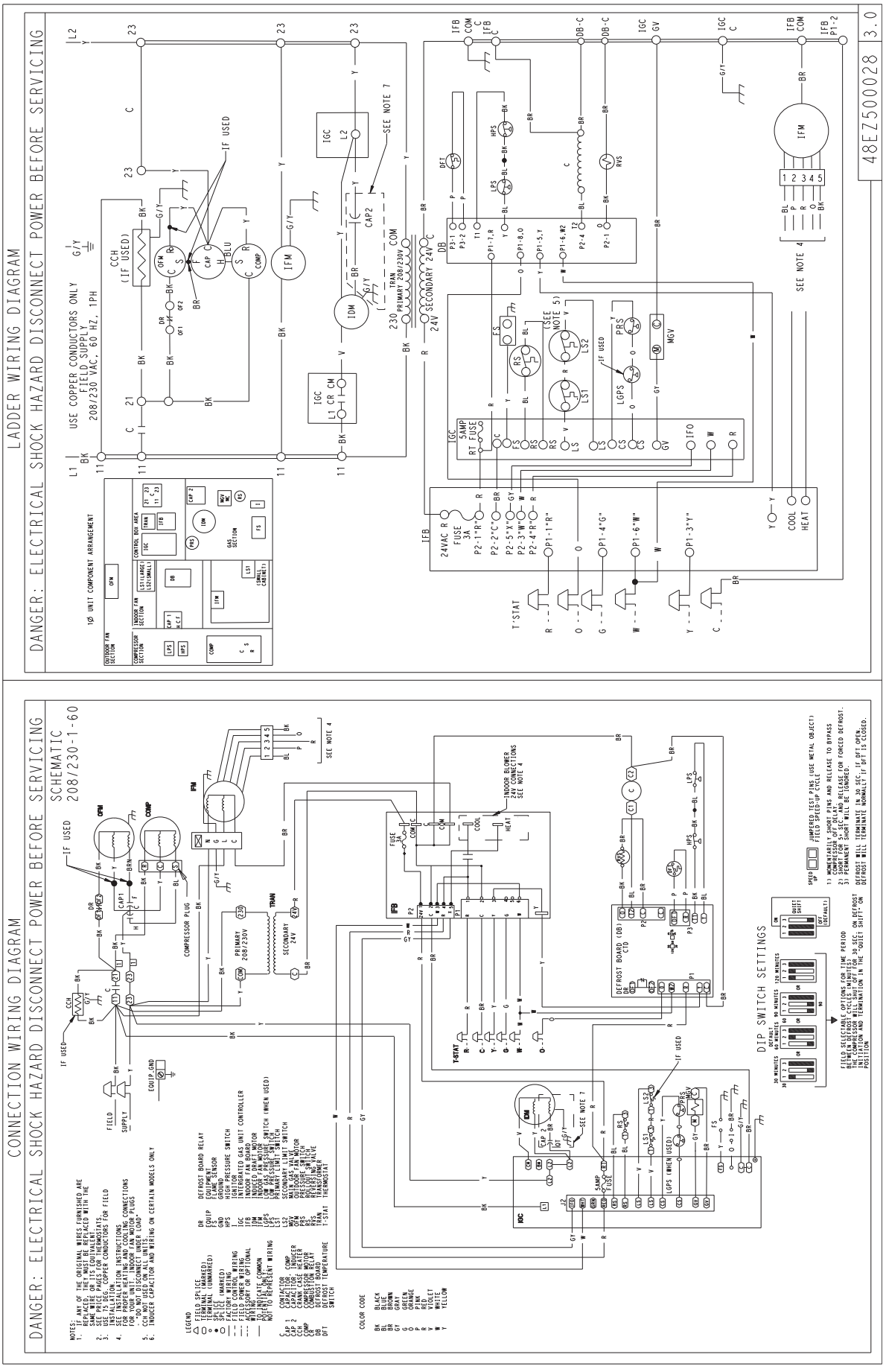
TYPICAL WIRING SCHEMATIC - 208/230-1-60



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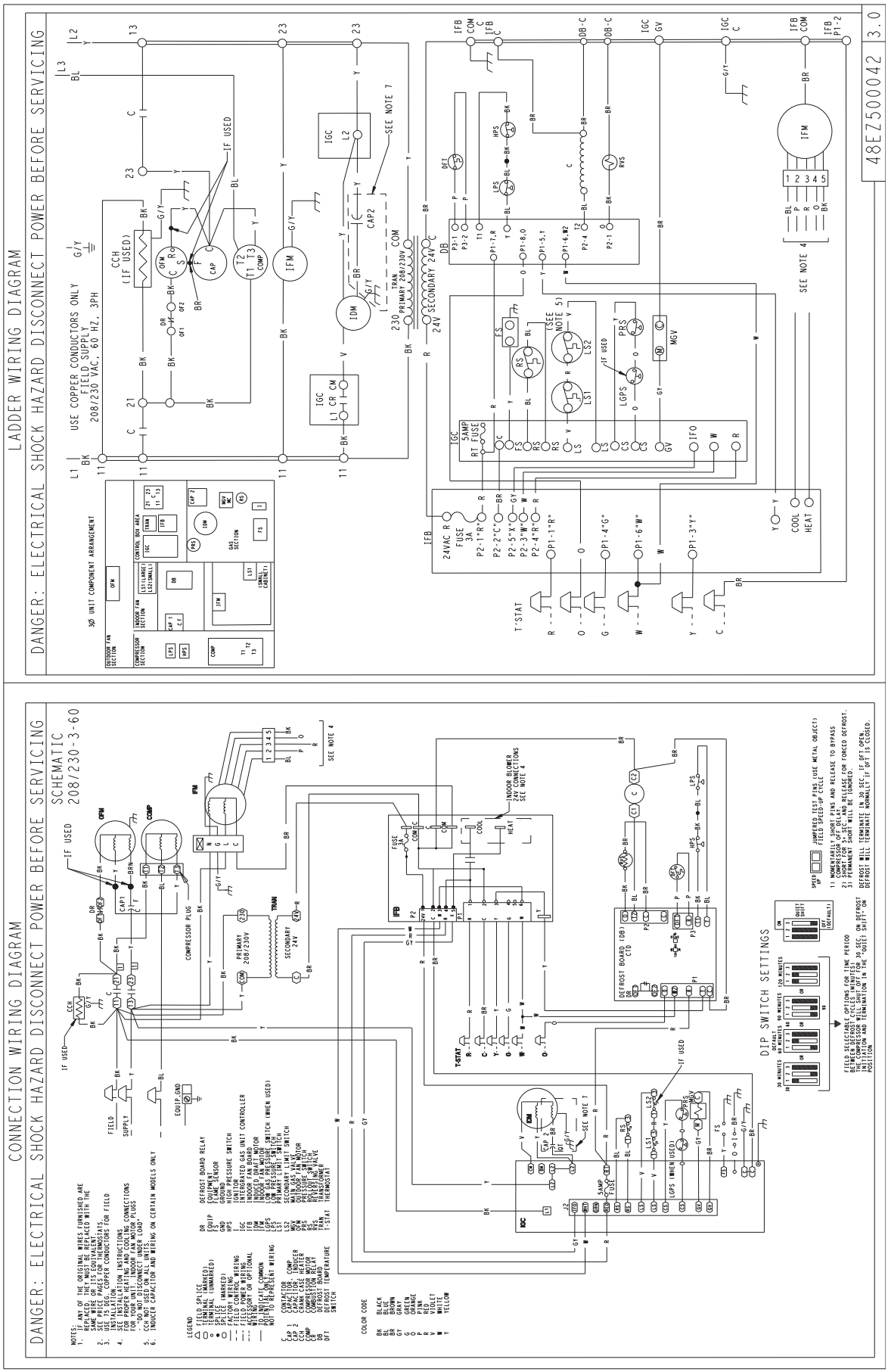
TYPICAL WIRING SCHEMATIC - 208/230-3-60



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CONTROLS

Operating sequence

When power is supplied to unit, the transformer (TRAN) is energized.

On units with crankcase heater, heater is also energized.

Cooling — With the thermostat subbase in the cooling position, the thermostat makes circuit R-O. This energizes the reversing valve solenoid (RVS) and places the unit in standby condition for cooling.

As the space temperature rises, the thermostat closes circuit R-Y. A circuit is made to contactor (C), starting the compressor (COMP) and outdoor-fan motor (OFM). Circuit R-G is made at the same time and starts the indoor-fan motor (IFM).

When the thermostat is satisfied, contacts open, deenergizing C. The COMP and OFM stop, and the IFM stops preselected time delay on the easy select board is satisfied.

Heating - On a call for heating, terminal W of the thermostat is energized, starting the induced-draft motor. When the pressure switch senses that the induced-draft motor is moving sufficient combustion air, the burner sequence begins. This function is performed by the integrated gas unit controller (IGC). The indoor (evaporator)-fan motor is energized 45 sec after flame is established. When the thermostat is satisfied and W is de-energized, the burners stop firing and the indoor (evaporator) fan motor shuts off after a 45-sec time-off delay. Please note that the IGC has the capability to automatically reduce the indoor fan motor on delay and increase the indoor fan motor off delay in the event of high duct static and/or partially-clogged filter.

Heat Pump Heating — On a call for heat, thermostat makes circuits R-Y and R-G.

A circuit is made to C, starting COMP and OFM. Circuit R-G is also completed, starting IFM.

Defrost — Defrost board (DB) is a time and temperature control, which includes a field-selectable time period (dip switch 1 and 2 on the board) between checks for defrost (30, 60, 90, or 120 minutes). Electronic timer and defrost cycle start only when contactor is energized and defrost thermostat (DFT) is closed.

The defrost board is also equipped with a third dip switch for selecting Quiet Shift operation. The Quiet Shift operation turns compressor off at defrost initiation and termination. Unit is factory shipped with quiet shift turned off.

Defrost mode is identical to cooling mode. except outdoor fan motor stops and gas heat turns on to warm air supplying the conditioned space. After defrost cycle, gas heat stays on to meet the demand cycle.

NOTE:

1. Compressor time delay occurs through the defrost control board.
2. Defrost control board has built in 5 minute compressor delay; once the compressor has started and then stopped, it cannot be restarted again until 5 minutes have elapsed.

GUIDE SPECIFICATIONS

Packaged Hybrid Heat Units Constant Volume Application

HVAC Guide Specifications

Size Range: **2 to 5 Tons, Nominal Cooling**
40,000 to 130,000 Btuh,
Nominal Heating Input

Model Number: **48EZ**

Part 1—General

SYSTEM DESCRIPTION

Outdoor, packaged, air-to-air heat pump unit utilizing a hermetic scroll compressor for cooling duty and optional electric heating. Unit shall discharge supply air vertically or horizontally as shown on contract drawings. Outdoor fan/coil section shall have a draw-thru design with vertical discharge for minimum sound levels.

QUALITY ASSURANCE

A. Unit shall be rated in accordance with ARI Standards 210/240 and 270.

B. Unit shall be designed in accordance with UL Standard 1995.

C. Unit shall be manufactured in a facility registered to ISO 9001 manufacturing quality standard.

D. Unit shall be UL listed and c-UL certified as a total package for safety requirements.

E. Roof curb shall be designed to conform to NRCA Standards.

F. Insulation and adhesives shall meet NFPA 90A requirements for flame spread and smoke generation.

G. Cabinet insulation shall meet ASHRAE Standard 62P.

DELIVERY, STORAGE AND HANDLING

Unit shall be stored and handled per manufacturer's recommendations.

Part 2 — Products

EQUIPMENT

A. General:

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

B. Unit Cabinet:

1. Unit cabinet shall be constructed of phosphated, zinc-coated, pre-painted steel capable of withstanding 500 hours of salt spray.
2. Normal service shall be through a single removable cabinet panel.
3. The unit shall be constructed on a rust proof unit base that has an externally trapped, integrated sloped drain.
4. Indoor fan compartment top surface shall be insulated with a minimum 1/2-in. (13 mm) thick, flexible fiberglass insulation, coated on the air side and retained by adhesive and mechanical means. The indoor wall sections will be insulated with a minimum semi-rigid, foil-faced board capable of being wiped clean. Aluminum foil-faced fiberglass insulation shall be used in the entire indoor air cavity section.
5. Unit shall have a field-supplied condensate trap.
6. Metal Insulated Duct Covers for side discharge will be standard on all sizes.
7. Unit insulation conforms to ASHRAE 62P.

C. Fans:

1. The indoor fan shall be 5-speed, direct-drive, as shown on equipment drawings.
2. Fan wheel shall be made from steel and shall be double-inlet type with forward-curved blades with corrosion resistant finish. Fan wheel shall be dynamically balanced.
3. Outdoor fan shall be direct-drive, propeller-type with aluminum blades riveted to corrosion resistant steel spiders, be dynamically balanced, and discharge air vertically.

D. Compressor:

1. Fully hermetic compressors with factory-installed vibration isolation.
2. Scroll compressors shall be standard on all units.
3. Compressor Protection:
   Defrost control shall protect compressor by preventing "short cycling."

E. Coils:

Indoor and outdoor coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. (Copper/copper and vinyl-coated construction available as option.) Tube sheet openings shall be belled to prevent tube wear.

F. Refrigerant Metering Device:
Refrigerant metering device shall be thermosttic expansion valve for cooling, and fixed orifice for heating.

G. Filters:
Filter section shall consist of field-installed, throwaway, 1-in. (25 mm)- thick fiberglass filters of commercially available sizes.

H. Controls and Safeties:

1. Unit controls shall be complete with a self-contained, low-voltage control circuit.
2. Units shall incorporate an internal compressor protector that provides reset capability.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 125°F (51.7°C) ambient outdoor temperature.
2. Compressor with standard controls shall be capable of operation down to 40°F (4.4°C) ambient outdoor temperature in cooling mode.
3. Unit shall be provided with 60-second fan time delay after the thermostat is satisfied.

J. Electrical Requirements:
All unit power wiring shall enter the unit cabinet at a single location.

K. Motors:

1. Compressor motors shall be of the refrigerant-cooled type with line-break thermal and current overload protection.
2. All fan motors shall have permanently lubricated bearings, and inherent, automatic reset, thermal overload protection.
3. Condenser fan motor shall be totally enclosed.

GUIDE SPECIFICATIONS (CONT)

L. Special Features Available:

1. Louvered Grille:
   Wire grille shall be standard on all units. Louvered grille shall be available as a factory-installed option to provide hail guard and vandalism protection.
2. Coil Options:
   Shall include factory-installed optional copper/copper and vinyl-coated refrigerant coils.
3. Economizer:
   a. Economizer controls capable of providing free cooling using outside air.
   b. Equipped with low leakage dampers not to exceed 3% leakage, at 1.0 IN. W.C. pressure differential.
   c. Spring return motor shuts off outdoor damper on power failure.
4. Flat Roof Curb:
   Curbs shall have seal strip and a wood nailer for flashing and shall be installed per manufacturer's instructions.
5. Manual Outdoor Air Damper:
   Package shall consist of damper, birdscreen, and rainhood which can be preset to admit outdoor air for year-round ventilation.
6. Thermostat:
   To provide for Hybrid heat two stage heating and one stage cooling in addition manual or automatic changeover and indoor fan control.
7. Natural-to-Propane Conversion Kit:
   Shall be complete with all required hardware to convert to propane gas operation at standard altitude (0 to 2000 ft [0 to 610 m] above sea level).
8. Propane-to-Natural Conversion Kit:
   Shall be complete with all hardware to convert to natural gas at standard altitude (0 to 2000 ft [0 to 610 m] above sea level).
9. Low Ambient Package:
   Shall consist of a solid-state control and outdoor coil temperature sensor for controlling outdoor-fan motor operation, which shall allow unit to operate down to 0°F outdoor ambient temperature.
10. Filter Rack Kit:
    Shall provide filter mounting for downflow applications.
11. Compressor Protection:
    Solid-state control shall protect compressor by preventing "short cycling."
12. Square-To-Round Duct Transitions (024-048):
    Shall have the ability to convert the supply and return openings from rectangular to round.
13. Crankcase Heater:
    Shall provide anti-floodback protection for lowload cooling applications.
14. High Altitude Propane Conversion Kit
    Shall consist of all required hardware to convert to propane gas heat operation at 2001 to 6000 ft (610 to 1829 m) above sea level.
15. Low NOx:
    Shall provide NOx reduction to values below 40 nanograms/joule to meet California emission requirements as shipped from factory.
16. Compressor Start Kit
    Shall provide additional sharting torque for single-phase compressors.

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