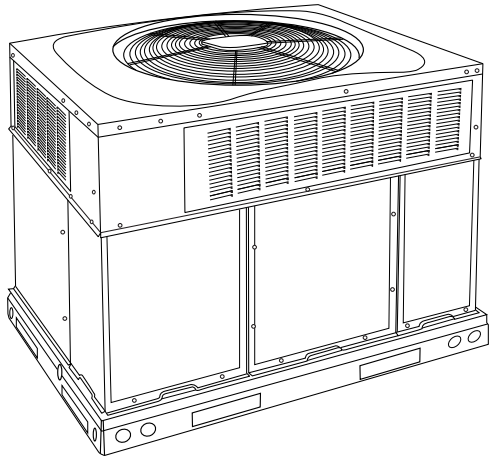
50NR
Performance™ Up to 15.5 SEER2 2-Stage Packaged Heat Pump System with Puron Advance™ (R-454B) Refrigerant
Single and Three Phase
2 to 5 Nominal Tons (Sizes 24-60)

Carrier

Product Data



A09033

Fig. 1 – Unit 50NR

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

- Up to 15.5 SEER2 / Up to 11.5 EER2 at 95°F (35°C) OD
- Up to 7.7 HSPF2
- Factory-Installed TXV
- Multi-speed ECM Blower Motor - Standard
- Sound levels as low as 71dBA
- Two Stages of Cooling/Heating
- Dehumidification Feature - Standard
- Cabinet air leakage of 2.0% or less at .5 in. W.C. when tested in accordance with ASHRAE standard 193
- Refrigerant leak detection dissipation system for added safety

Features/Benefits

One-piece heat pump unit with optional electric heater, low sound levels, easy installation, low maintenance, and dependable performance.

Carrier's unique refrigerant designed to be environmentally balanced. Puron Advance is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. Puron Advance refrigerant is in service in millions of systems proving highly reliable and is non-ozone depleting. This unit is designed and tested with Puron Advance and contains a dissipation system.

Easy Installation

Factory-assembled package is a compact, fully self-contained, electric cooling unit that is prewired, pre-piped, and pre-charged for minimum installation expense. These units are available in a variety of standard cooling sizes 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.

Innovative Unit Base Design

On the inside a high-tech composite material will not rust and incorporates a sloped drain pan which improves drainage and helps inhibit mold, algae and bacterial growth. On the outside metal base rails provide added stability as well as easier handling and rigging.

Convertible duct configuration

Unit is designed for use in either downflow or horizontal applications. Each unit is converted from horizontal to downflow and includes horizontal duct covers. Downflow operation is provided in the field to allow vertical ductwork connections. The basepan seals on the bottom openings to ensure a positive seal in the vertical airflow mode.

Efficient operation High-efficiency design offers SEER2 (Seasonal Energy Efficiency Ratios) of up to 15.5 and HSPF2 of up to 7.7. (See page 3)

Durable, dependable components

Scroll Compressors have 2 stages of cooling/heating and 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.

Multi-speed ECM Blower Motor is standard on all models.

Direct-drive PSC (Permanent Split Capacitor) condenser-fan motors are designed to help reduce energy consumption and provide for cooing operation down to 40°F (4.4°C) outdoor temperature. low ambient kit is available as a field-installed accessory.

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. Factory-installed leak detection dissipation system for added safety.

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 tin-plated 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.

Low sound ratings ensure a quiet indoor and outdoor environment with sound ratings as low as 71dBA. (See page 3.)

Easy to service cabinets provide easy 3 panel accessibility to serviceable components during maintenance and installation. The basepan with integrated drain pan provides easy ground level installation with a mounting pad. A nesting feature ensures a positive basepan to roof curb seal when the unit is roof mounted. A convenient 3/4-in. (19.05 mm) wide perimeter flange makes frame mounting on a rooftop easy.

Dehumidification Feature - Standard

This unit has independent fan speeds for low stage cooling and high stage cooling. In addition, 208/230 VAC models have the field-selectable capability to run a dehumidification ('DHUM') speed on high stage cooling (as low as 320CFM per ton). Coupled with the improved dehumidification associated with low stage cooling, the DHUM speed allows for a complete dehumidification solution independent of cooling stage. The dehumidification control must open the control circuit on humidity rise above the dehumidification set point.

NOTE: The dehumidification feature on high stage cooling does not support use of an economizer.

Standard horizontal metal duct covers with insulation come with the unit and cover the horizontal duct openings. These can be left in place if the units are converted to downflow.

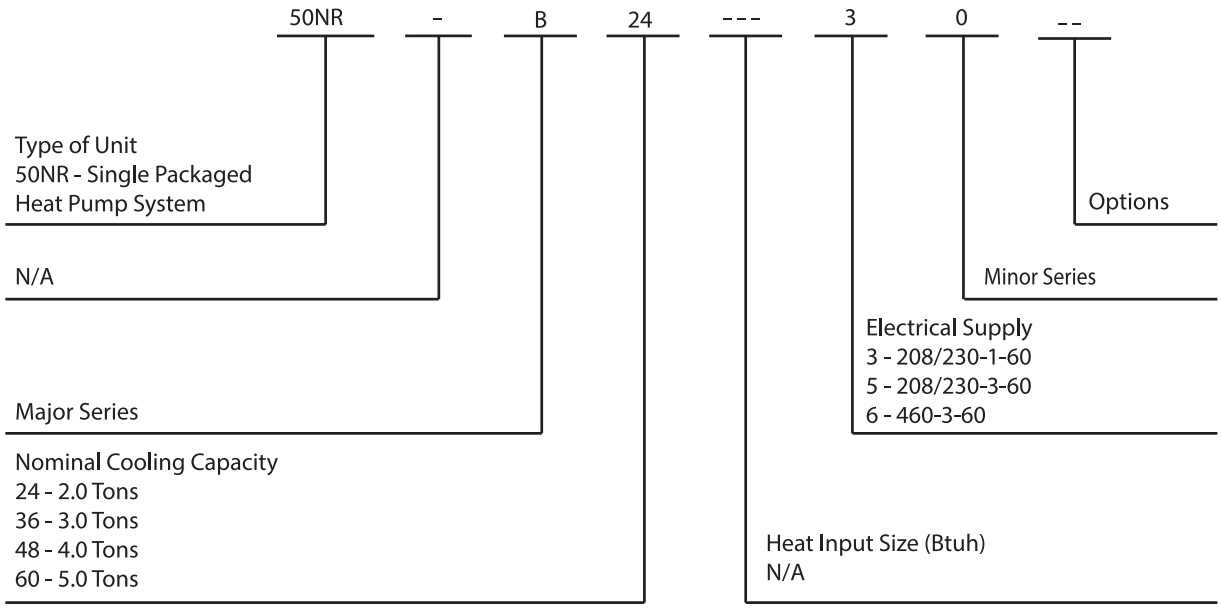
Cabinets are constructed of heavyduty, phosphated, zinc-coated prepainted steel capable of withstanding 500 hours in salt spray. Interior surfaces of the evaporator/electric heater compartment are insulated with foil-faced insulation, which keeps the conditioned air from being affected by the outdoor 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.

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Model Number Nomenclature



ASHRAE 90.1 COMPLIANT

c UL us LISTED

AHRI CERTIFIED www.ahridirectory.org

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

energy ENERGY STAR

SAP ORDERING NO.	NOMINAL COOLING CAPACITY (Btuh)	VOLTS-PHASE (60 HZ)	APPROX SHIP WT (LB)
50NR-B24---3	24,000	208/230-1	393
50NR-B36---3	36,000	208/230-1	442
50NR-B36---5	36,000	208/230-3	442
50NR-B36---6	36,000	460-3	442
50NR-B48---3	48,000	208/230-1	493
50NR-B48---5	48,000	208/230-3	493
50NR-B48---6	48,000	460-3	493
50NR-B60---3	60,000	208/230-1	547
50NR-B60---5	60,000	208/230-3	547
50NR-B60---6	60,000	460-3	547

AHRI* Capacities

Cooling Capacities and Efficiencies

Unit Size	Nominal Tons	Standard CFM (High / Low Stage)	Net Cooling Capacity - Btuh (High Stage)	EER2 @ A**	SEER2†
24	2	855 / 675	22200	11.5	15.2
36	3	1200 / 900	35200	11.5	15.2
48	4	1600 / 1200	46500	11.5	15.2
60	5	1750 / 1400	56000	11.5	15.5

Heat Pump Heating Capacities and Efficiencies

Unit Size	Heating Capacity - Btuh (High Stage) @ 47°F (8.3°C) Outdoor Temperature	COP (High Stage) @ 47°F (8.3°C) Outdoor Temperature	Heating Capacity - Btuh (High Stage) @ 17°F (-8.3°C) Outdoor Temperature	COP (High Stage) @ 17°F (-8.3°C) Outdoor Temperature	HSPF2	Heating Cd
24	23400	4.0	12000	2.3	7.2	0.25
36	34400	3.4	19600	2.3	7.2	0.25
48	44500	3.6	25400	2.4	7.2	0.25
60	55500	3.2	35200	2.6	7.7	0.25

LEGEND
dB-Sound Levels (decibels)
db—Dry Bulb
SEER—Seasonal Energy Efficiency Ratio
wb—Wet Bulb
COP-Coefficient of Performance
* Air Conditioning, Heating & 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 AHRI 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 wb (19.4°C) indoor entering-air temperature and 95°F db (35°C) outdoor entering-air temperature.
2. Before purchasing this appliance, read important energy cost and efficiency information available from AHRIdirectory.org.

A-Weighted Sound Power Level (dBA)

UNIT SIZE	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
24	71	58	60	62	67	64	58	51
36	73	58	63	67	69	64	58	51
48	71	59	62	65	66	62	56	50
60	71	59	62	65	65	63	59	52

NOTE: Tested in compliance with AHRI 270 but not listed with AHRI.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Physical Data

UNIT SIZE	24	36	48	60
NOMINAL CAPACITY (ton)	2	3	4	5
SHIPPING WEIGHT lb.	393	442	493	547
SHIPPING WEIGHT (kg)	178	201	224	248
COMPRESSORS	Scroll			
Quantity	1			
REFRIGERANT (R-454B)				
Quantity lb	8.25	8.75	10.0	15.5
Quantity (kg)	3.7	4.0	4.5	7.0
REFRIGERANT METERING DEVICE	TXV, Indoor TXV			
MINIMUM CONDITIONED SPACE AREA (SQ. FT.)	137	137	152	243
ORIFICE				
ID (in.)	.032 (2)	.035 (2)	.038 (2)	.040 (2)
ID (mm)	0.81 (2)	0.87 (2)	0.97 (2)	1.02 (2)
OUTDOOR COIL				
Rows...Fins/in.	2...21	2...21	2...21	2...21
Face Area (sq ft)	18.8	19.4	23.3	23.3
OUTDOOR FAN				
Nominal Cfm	2200	3800	3600	3600
Diameter in.	24	26	26	26
Diameter (mm)	609.6	660.4	660.4	660.4
Motor Hp (Rpm)	1/12 (800)	1/5 (810)	1/5 (810)	1/5 (810)
INDOOR COIL				
Rows...Fins/in.	3...17	3...17	3...17	4...17
Face Area (sq ft)	3.7	4.7	5.7	5.7
INDOOR BLOWER				
Required Minimum Dissipation Airflow (Cfm)	239	239	266	426
Nominal Low Stage Cooling Airflow (Cfm)	675	900	1200	1400
Nominal High Stage Cooling Airflow (Cfm)	855	1200	1600	1750
Size in.	10x10	11x10	11x10	11x10
Size (mm.)	254x254	279.4x254	279.4x254	279.4x254
Motor HP (RPM)	1/2 (1050)	3/4 (1000)	1.0 (1075)	1.0 (1075)
HIGH-PRESSURE SWITCH	650 +/- 15			
(psig) Cut-out Reset (Auto)	420 +/- 25			
LOW-PRESSURE SWITCH	20 +/- 5			
(psig) cut-out Reset (auto)	45 +/- 5			
RETURN-AIR FILTERS (Filter inside home)*				
Throwaway Size in.	20x20x1	24x30x1	24x36x1	
Throwaway Size (mm)	508x508x25	610x762x25	610x914x25	

*. Required filter sizes shown are based on the larger of the AHRI (Air Conditioning Heating and Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for throwaway type or 450 ft/minute for high-capacity type. Air filter pressure drop for non-standard filters must not exceed 0.08 in. W.C.

Accessory Kit Filter Sizes (Shipped With Kit)

Kit	Filter 1 Size	Filter 2 Size
CPFILTRK007A00	12"x20"x1"	12"x20"x1"
CPFILTRK008A00	14"x24"x1"	16"x24"x1"
CPFILTRK009A00	16"x24"x1"	18"x24"x1"
CPMANDPR007A00	12"x20"x1"	12"x20"x1"
CPMANDPR008A00	14"x24"x1"	16"x24"x1"
CPMANDPR009A00	16"x24"x1"	18"x24"x1"

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Accessories

AREA	DESCRIPTION	PART NO.	USED WITH
Curbs and Duct Connections	Flat Roof Curbs, 14" High (-011 Kit may be used with 36-60 sizes with overhang)	CPRFCURB011B00	24
		CPRFCURB013B00	36-60
	Adapter Curb for 2008 and earlier roofcurb with 2009 and later baserail units	CPADCURB001A00	24
		CPADCURB002A00	36-60
	Gasket Kit for 2008 and earlier roofcurb with 2009 and later baserail units	CPGSKTKIT001A00	All
	Square to Round (1 set of 2, use with horizontal duct flanges)	CPDUCFLG002A00	24-48
Internal Filter Racks/Economizers/ Dampers	Economizer - Convertible, Gear-driven, Outdoor dry bulb sensor, Filter Rack NOT INCLUDED. (Contact MicroMetl Customer Service at 1-800-662-4822 to order.)	ECC-SPPSMCB-DYDB-2	24
		ECC-SPPLGCB-DYDB-2	36-60
	Economizer - Convertible, Gear-driven, Outdoor enthalpy sensor, Filter Rack NOT INCLUDED. (Contact MicroMetl Customer Service at 1-800-662-4822 to order.)	ECC-SPPSMCB-DYEB-2	24
		ECC-SPPLGCB-DYEB-2	36-60
	Economizer Relays for Heat Pumps	CPRLYKIT001B00	All
	Manual Outside Air Damper (Includes filter rack and 1" filters, same as CPFILTRK kit)	CPMANDPR007A00	24
		CPMANDPR008A00	36
		CPMANDPR009A00	48-60
	Internal Filter Rack (Includes 1" filters)	CPFILTRK007A00	24
		CPFILTRK008A00	36
		CPFILTRK009A00	48-60
AC Accessories	240V Crankcase Heater (Factory-Installed on 208/230 VAC-3 phase units)	CPCRKHTR008A00	24-36
		CPCRKHTR004A00	48-60
	Low Ambient Control (Pressure Switch)	KSALA0301410	All
	Isolation Relay (Use with Low Ambient Control)	KHAIR0201AAA	All
	Time Guard II (5 minute compressor delay anti-short cycle protection. Some non-corporate thermostats do not have short cycle protection, for which use of this accessory is recommended.)	CRTIMEGD001A00	All
	PTC Compressor Start Assist Kit (For single phase units only)	CPHSTART002A00	All
Electric Heat Kits	**ELECTRIC HEATERS (208/230 VAC -SINGLE PHASE 60 Hz)**		
	NOMINAL CAPACITY (kW) / **FUSES**	**PART NO.**	**USED WITH**
	5.0 / No	CPHEATER052B0*	24-36
	5.0 / Yes	CPHEATER064B0*	All
	7.2 / No	CPHEATER069B0*	24
	7.2 / Yes	CPHEATER070B0*	All
	10.0 / Yes	CPHEATER050B0*	All
	15.0 / Yes	CPHEATER066B0*	36-60
	20.0 / Yes	CPHEATER054B0*	48-60
	ELECTRIC HEATERS (208/230 VAC -THREE PHASE 60 Hz)		
	5.0 / No	CPHEATER055B0*	36-60
	10.0 / No	CPHEATER056B0*	36-48
	10.0 / Yes	CPHEATER068B0*	36-60
	15.0 / Yes	CPHEATER058B0*	36-60
	20.0 / Yes	CPHEATER059B0*	48-60
	ELECTRIC HEATERS (460 VAC -THREE PHASE 60 Hz)		
	10.0 / No	CPHEATER061B0*	36-60
	15.0 / No	CPHEATER062B0*	36-60
	20.0 / No	CPHEATER063B0*	48-60

* May be any character.

Electric Heat Pressure Drop Tables (IN. W.C.)

Small Cabinet: 24

STATIC	STANDARD CFM (SCFM)											
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
5 kW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07
10 kW	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07	0.09	0.10	0.11
15 kW	0.00	0.00	0.00	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18
20 kW	0.00	0.00	0.02	0.04	0.06	0.08	0.09	0.11	0.13	0.15	0.17	0.19

Large Cabinet: 36-60

STATIC	STANDARD CFM (SCFM)														
	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
5 kW	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12
10 kW	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
15 kW	0.00	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15
20 kW	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16

Minimum Airflow for Safe Electric Heater Operation (CFM)

SIZE	24	36	48	60
Cfm	800	1200	1600	1750

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

24 Unit Dimensions

COOLING CAPACITY	UNIT WT.		UNIT HEIGHT IN/MM	CENTER OF GRAVITY IN/MM					
	LB	KG	"A"	X		Y		Z	
24	382	173.3	51-3/4 1315	20-1/2	520.7	15-3/4	400.1	23.0	584.2

UNIT	CORNER WEIGHT LB/KG							
	"1"		"2"		"3"		"4"	
24	57.3	26.0	76.4	34.7	114.6	52.0	133.7	60.7

NOTE: 1. ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER.
2. * - INDICATES ALL FIOP CODES FOR THE MODELS LISTED.

REQUIRED CLEARANCES TO COMBUSTIBLE MATL

	INCHES [MM]
TOP OF UNIT	14 [355.6]
DUCT SIDE OF UNIT	2 [50.8]
SIDE OPPOSITE DUCTS	14 [355.6]
BOTTOM OF UNIT	0 [0.0]
ELECTRICAL PANEL	36 [914.4]

NEC. REQUIRED CLEARANCES.

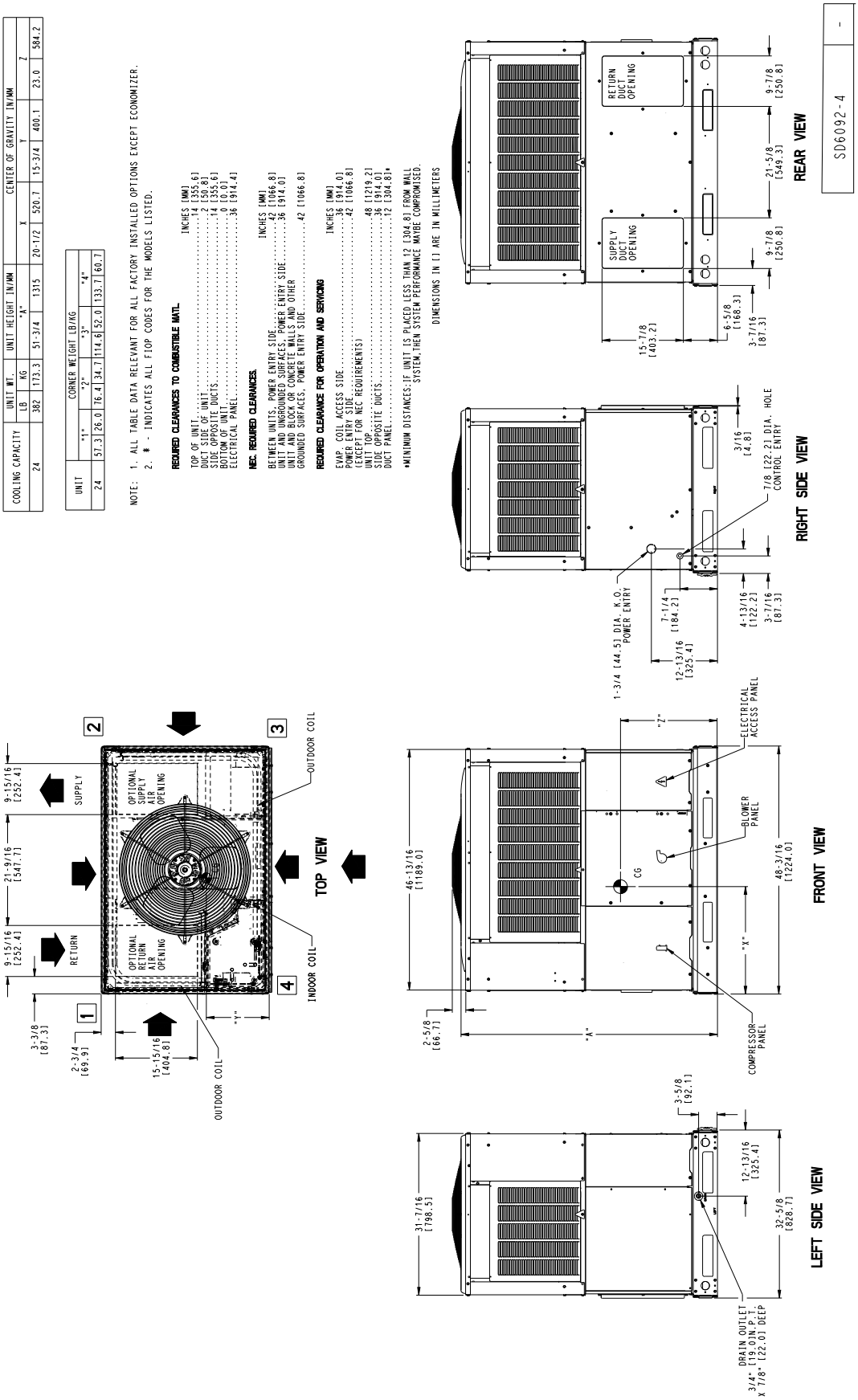
	INCHES [MM]
BETWEEN UNITS, POWER ENTRY SIDE	42 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	36 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	42 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

	INCHES [MM]
EVAP. COIL ACCESS SIDE	36 [914.0]
POWER ENTRY SIDE	42 [1066.8]
(EFFECT FOR NEC REQUIREMENTS)	
UNIT TOP	48 [1219.2]
SIDE OPPOSITE DUCTS	36 [914.0]
DUCT PANEL	12 [304.8]*

*MINIMUM DISTANCES:IF UNIT IS PLACED LESS THAN 12 [304.8] FROM WALL SYSTEM,THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

DIMENSIONS IN [] ARE IN MILLIMETERS



A250108

36-60 Unit Dimensions

COOLING CAPACITY	UNIT WT.		UNIT HEIGHT IN/MM		CENTER OF GRAVITY IN/MM					
			"A"		X		Y		Z	
	LB	KG								
36	428	194.2	50-3/4	1289	20-1/4	514.4	17-1/2	444.5	17-5/8	447.7
48	479	217.3	54-3/4	1391	20-1/4	514.4	17-1/2	444.5	18	457.2
60	533	241.8	54-3/4	1391	20-1/4	514.4	17-1/2	444.5	18	457.2

UNIT	CORNER WEIGHTS LB/KG							
	"1"		"2"		"3"		"4"	
36	64.2	29.1	85.6	38.8	128.4	58.3	148.9	67.6
48	71.9	32.6	95.8	43.5	143.7	65.2	167.1	76.1
60	80.0	36.3	106.6	48.4	159.9	72.5	186.6	84.6

NOTE: 1. ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER.
2. * - INDICATES ALL FIOP CODES FOR THE MODELS LISTED.

REQUIRED CLEARANCES TO COMBUSTIBLE MATL.

	INCHES [MM]
TOP OF UNIT	14 [355.6]
DUCT SIDE OF UNIT	2 [50.8]
SIDE OPPOSITE DUCTS	14 [355.6]
BOTTOM OF UNIT	0 [0.0]
ELECTRICAL PANEL	36 [914.4]

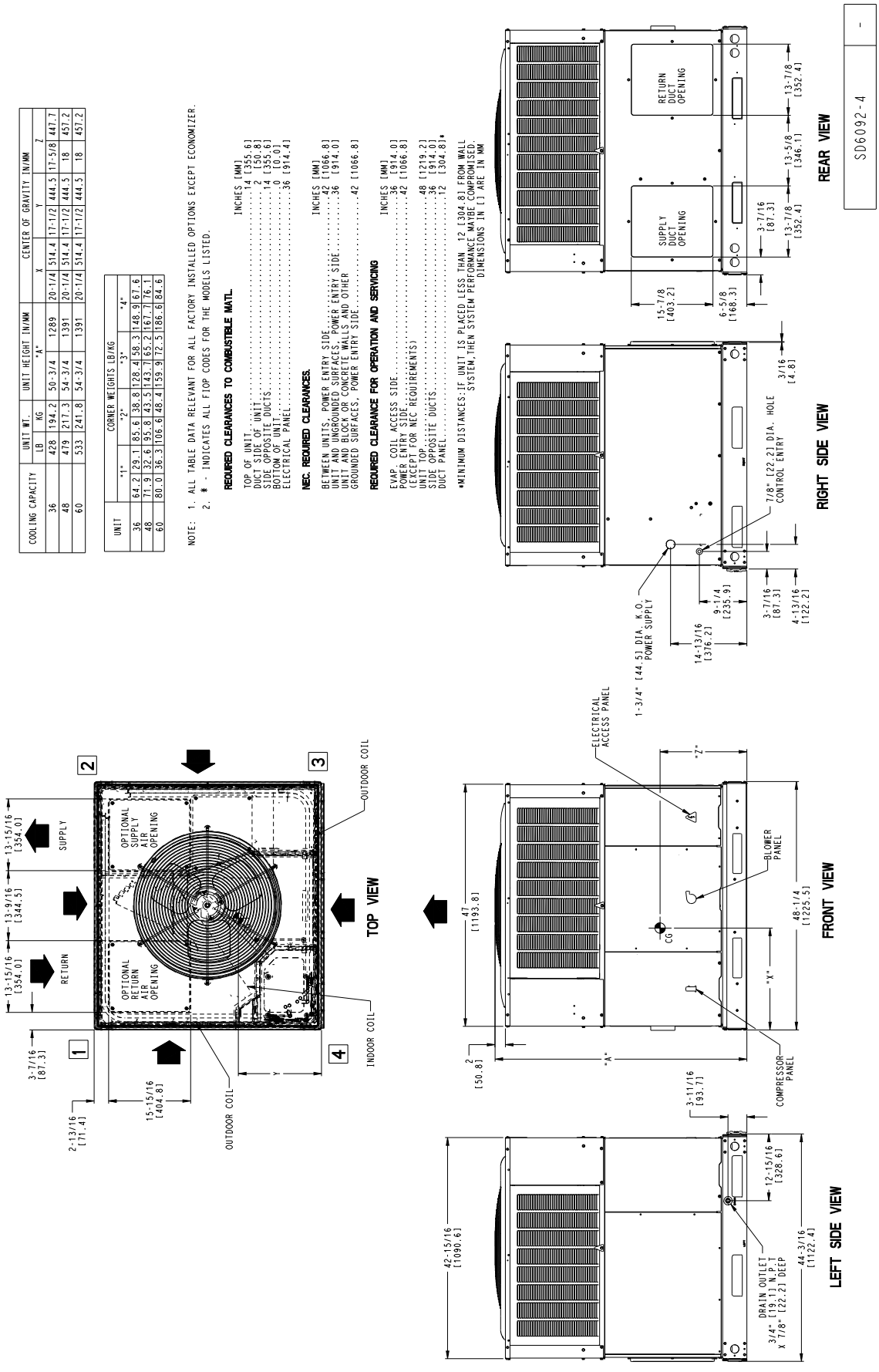
NEC. REQUIRED CLEARANCES.

	INCHES [MM]
BETWEEN UNITS, POWER ENTRY SIDE	42 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	36 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	42 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

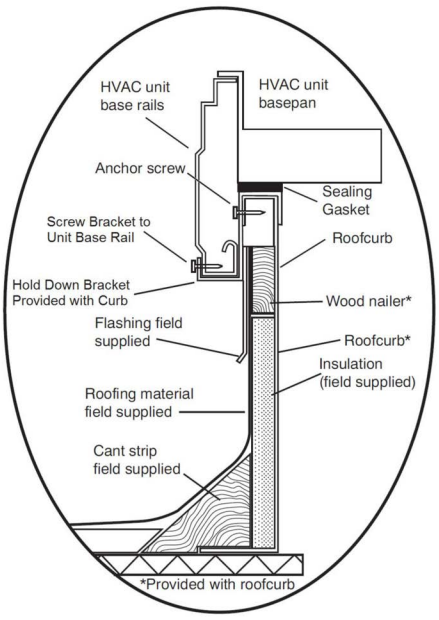
	INCHES [MM]
EVAP. COIL ACCESS SIDE	36 [914.0]
POWER ENTRY SIDE	42 [1066.8]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48 [1219.2]
SIDE OPPOSITE DUCTS	36 [914.0]
DUCT PANEL	12 [304.8]*

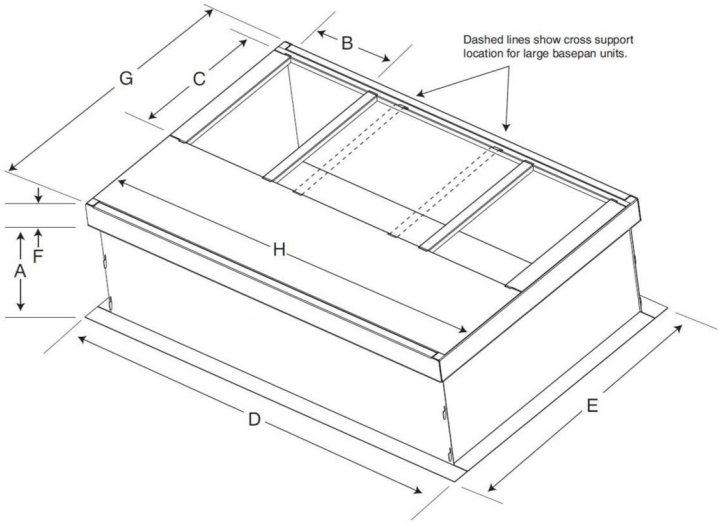
*MINIMUM DISTANCES:IF UNIT IS PLACED LESS THAN 12 [304.8] FROM WALL SYSTEM,THEN SYSTEM PERFORMANCE MAYBE COMPROMISED. DIMENSIONS IN [ ] ARE IN MM



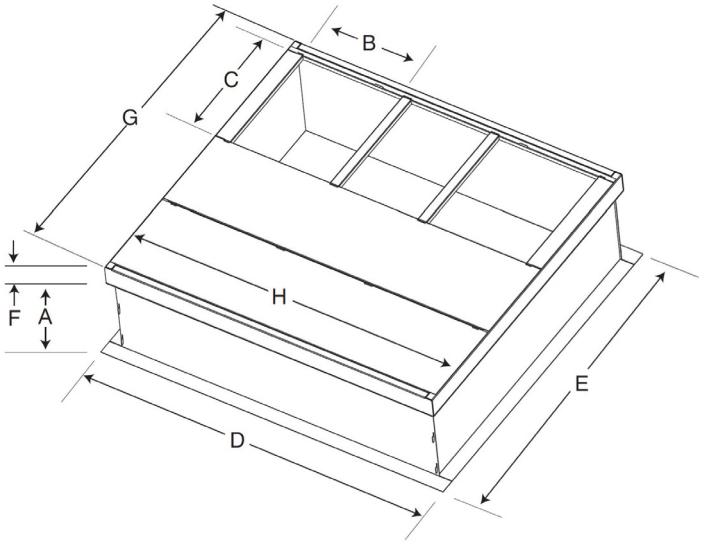
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Roof Curb Accessory

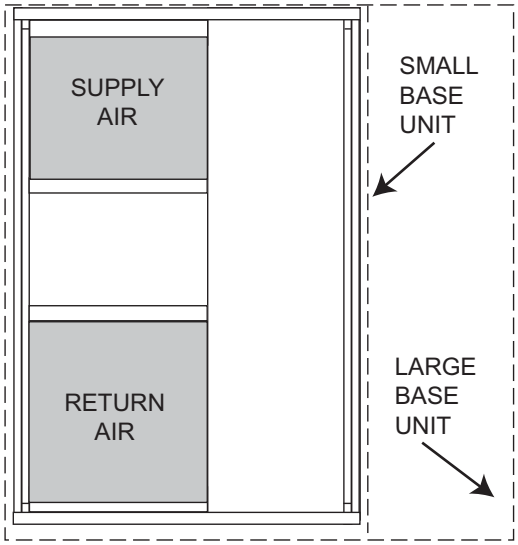




SMALL/COMMON CURB



LARGE CURB



UNIT PLACEMENT ON COMMON CURB

SMALL OR LARGE BASE UNIT

A180216

UNIT SIZE	CATALOG NUMBER	A IN. (mm)	B (small/common base) IN. (mm)*	B (large base) IN. (mm)*	C IN. (mm)	D IN. (mm)	E IN. (mm)	F IN. (mm)	G IN. (mm)	H IN. (mm)
Small or Large	CPRFCURB011B00	14 (356)	10 (254)	14 (356)	16 (406)	47.8 (1214)	32.4 (822)	2.7 (69)	30.6 (778)	46.1 (1170)
Large	CPRFCURB013B00	14 (356)	14 (356)				43.9 (1116)		42.2 (1072)	

*. * Part Number CPRCURB011B00 can be used on both small and large basepan units. The cross supports must be located based on whether the unit is a small basepan or a large basepan.

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. Roof curb is made of 16-gauge steel.
4. Attach ductwork to curb (flanges of duct rest on curb).
5. Insulated panels: 1-in. (25.4 mm) thick fiberglass 1 lb. density.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Selection Procedure (with example)

Determine cooling and heating requirements at design conditions:

Given:

Required Cooling Capacity (TC) ..... 34,000 Btuh
Sensible Heat Capacity (SHC) ..... 24,000 Btuh
Required Heating Capacity ..... 15,000 Btuh
Condenser Entering Air Temperature ..... 95°F(35°C)
Indoor-Air Temperature ..... 80°F (26°C) edb
..... 67°F (19°C) ewb
Evaporator Air Quantity..... 1200 CFM
External Static Pressure ..... 0.20 IN. W.C.
Electrical Characteristics 230-1-60

Select unit based on required cooling capacity.

Enter Net Cooling Capacities table at condenser entering temperature of 95°F (35°C), indoor air entering at 1200 cfm and 67°F (19°C) ewb (entering wet bulb). The unit will provide a total capacity of 35,400 Btuh and a SHC of 26,500 Btuh.

Select electric heat.

The required heating capacity is 15,000 Btuh.

Determine additional electric heat capacity in kW.

$$\frac{15{,}000 \text{ Btuh}}{3414 \text{ Btuh/kW}} = 4.4 \text{ kW of heat required}$$

Enter the electric Heater Packages table for 208/240, single-phase, A36 unit. The 5 kW heater at 240v most closely satisfies the heating required. To calculate kW at the 230v, multiply the heater kW by multiplication factor 0.92 found in the Wattage Multiplication Factors table.

5 kW x 0.92 = 4.60 kW

4.60 kW x 3414 = 15,704 Btuh

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	0.060 IN. W.C.
Wet Coil Pressure Drop	0.060 IN. W.C.
Total Static Pressure	0.320 IN. W.C.

Enter the table for Wet Coil Air Delivery—horizontal discharge, 230. At 0.30 IN. W.C. ESP (external static pressure) and medium speed, the fan will deliver 1294 cfm.

Select unit that corresponds to power source available.

The Electrical Data Table shows that the unit is designed to operate at 230-1-60.

Performance Data

024 High Cool

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	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	
700/.08	57 (13.8)	20.9	20.9	1.5	19.7	19.7	1.6	18.4	18.4	1.8	17.0	17.0	2.0	14.5	14.5	2.2	12.2	12.2	2.7
	62 (16.6)	21.7	20.9	1.5	20.2	19.9	1.6	18.9	18.6	1.8	17.4	17.1	2.0	14.9	14.7	2.2	12.5	12.3	2.7
	63* (17.2)	22.2	16.9	1.5	20.6	16.2	1.6	19.1	15.3	1.8	17.4	14.9	2.0	14.8	13.5	2.2	12.1	11.8	2.7
	67 (19.4)	23.8	17.6	1.5	22.2	16.9	1.6	20.5	16.0	1.8	18.7	15.5	2.0	15.9	14.0	2.2	13.0	12.7	2.7
	72 (22.2)	26.0	14.0	1.5	24.2	13.4	1.6	22.4	12.6	1.8	20.4	12.1	2.0	17.3	10.8	2.2	14.2	9.6	2.7
855/.09	57 (13.8)	23.4	23.4	1.5	22.1	22.1	1.7	20.6	20.6	1.8	19.0	19.0	2.0	16.3	16.3	2.3	13.7	13.7	2.7
	62 (16.6)	23.7	23.2	1.5	22.1	22.1	1.7	20.6	20.6	1.8	19.0	19.0	2.0	16.3	16.3	2.3	13.7	13.7	2.7
	63* (17.2)	23.9	18.7	1.5	22.3	18.0	1.7	20.7	17.0	1.8	18.8	16.5	2.0	16.0	15.0	2.3	13.1	13.1	2.7
	67 (19.4)	25.8	19.5	1.5	24.0	18.8	1.7	22.2	17.7	1.9	20.2	17.2	2.0	17.2	15.6	2.3	14.1	14.1	2.7
	72 (22.2)	28.1	15.6	1.5	26.1	14.8	1.7	24.3	13.9	1.9	22.0	13.4	2.1	18.7	12.0	2.3	15.4	10.7	2.7
900/.09	57 (13.8)	23.7	23.4	1.5	22.3	22.1	1.7	20.8	20.6	1.9	19.2	19.0	2.1	16.5	16.3	2.3	13.8	13.7	2.7
	62 (16.6)	23.9	23.4	1.5	22.3	22.1	1.7	20.9	20.6	1.9	19.2	19.0	2.1	16.5	16.3	2.3	13.8	13.7	2.7
	63* (17.2)	24.2	18.7	1.5	22.5	18.0	1.7	20.9	17.0	1.9	19.0	16.5	2.1	16.1	15.0	2.3	13.2	13.1	2.7
	67 (19.4)	26.0	19.5	1.5	24.2	18.8	1.7	22.4	17.7	1.9	20.4	17.2	2.1	17.3	15.6	2.3	14.2	14.1	2.7
	72 (22.2)	28.4	15.6	1.6	26.4	14.8	1.7	24.5	13.9	1.9	22.3	13.4	2.1	18.9	12.0	2.3	15.5	10.7	2.7

See Legend and Notes on page 18.

024 High Heat

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE																					
		-10°F (-23.3°C)			0°F (-17.8°C)			10°F (-12.2°C)			20°F (-6.7°C)			30°F (-1.1°C)			40°F (4.4°C)			50°F (8.3°C)			60°F (15.6°C)		
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°F (18.3°C)	700	5.7	5.3	1.3	7.5	6.9	1.3	10.4	9.6	1.4	13.2	11.9	1.4	15.6	13.7	1.5	20.1	20.1	1.6	24.9	24.9	1.7	31.2	31.2	1.8
	855	5.8	5.4	1.3	7.6	7.0	1.4	10.5	9.7	1.4	13.3	12.1	1.5	15.8	13.8	1.5	20.4	20.4	1.6	25.2	25.2	1.7	31.5	31.5	1.8
	900	5.9	5.4	1.3	7.7	7.1	1.4	10.6	9.7	1.4	13.4	12.1	1.4	15.8	13.8	1.5	20.4	20.4	1.6	25.5	25.5	1.6	31.6	31.6	1.8
70°F (21.1°C)	700	5.6	5.1	1.3	7.3	6.8	1.4	10.1	9.3	1.5	12.8	11.6	1.5	15.2	13.3	1.6	19.6	19.6	1.6	24.3	24.3	1.7	30.4	30.4	1.9
	855	5.7	5.2	1.4	7.4	6.8	1.4	10.2	9.4	1.5	13.0	11.9	1.5	15.3	13.9	1.6	19.8	19.8	1.7	24.5	24.5	1.8	30.7	30.7	1.9
	900	5.7	5.3	1.4	7.5	6.9	1.4	10.3	9.5	1.5	13.0	11.8	1.5	15.4	13.5	1.6	19.9	19.9	1.6	24.8	24.8	1.7	30.7	30.7	1.8
75°F (23.9°C)	700	5.5	5.0	1.4	7.2	6.6	1.5	9.9	9.1	1.5	12.6	11.4	1.6	15.0	13.2	1.6	19.4	19.4	1.7	24.0	24.0	1.8	30.1	30.1	2.0
	855	5.6	5.1	1.4	7.3	6.7	1.5	10.0	9.2	1.5	12.7	11.5	1.6	15.2	13.3	1.7	19.6	19.6	1.7	24.3	24.3	1.8	30.4	30.4	1.9
	900	5.6	5.2	1.4	7.3	6.7	1.5	10.1	9.3	1.5	12.8	11.6	1.6	15.2	13.3	1.6	19.7	19.7	1.7	24.5	24.5	1.8	30.4	30.4	1.9

See Legend and Notes on page 18.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Performance Data (Continued)

024 Low Cool

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	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	
525/.04	57 (13.8)	15.2	15.2	0.9	14.2	14.2	1.1	12.9	12.9	1.2	11.7	11.7	1.4	10.5	10.5	1.6	9.3	9.3	1.8
	62 (16.6)	15.8	14.6	0.9	14.6	13.5	1.1	13.2	13.2	1.2	12.0	12.0	1.4	10.7	10.7	1.6	9.6	9.6	1.8
	63* (17.2)	16.1	12.0	0.9	14.9	11.5	1.1	13.4	11.2	1.2	11.9	10.7	1.4	10.6	9.7	1.6	9.2	8.5	1.8
	67 (19.4)	17.3	12.5	0.9	16.0	11.9	1.1	14.4	11.6	1.2	12.8	11.1	1.4	11.4	10.4	1.6	9.9	9.1	1.8
	72 (22.2)	18.9	10.0	0.9	17.4	9.4	1.1	15.7	9.2	1.2	14.0	8.7	1.4	12.4	8.0	1.6	10.8	6.8	1.8
675/.06	57 (13.8)	16.9	16.9	0.9	15.8	15.8	1.1	14.3	14.3	1.2	12.9	12.9	1.4	11.6	11.6	1.6	10.3	10.3	1.8
	62 (16.6)	17.1	17.1	0.9	15.8	15.8	1.1	14.3	14.3	1.2	12.9	12.9	1.4	11.6	11.6	1.6	10.3	10.3	1.8
	63* (17.2)	17.3	14.0	0.9	15.9	13.4	1.1	14.3	13.1	1.2	12.8	12.4	1.4	11.3	11.3	1.6	9.9	9.9	1.8
	67 (19.4)	18.6	14.6	1.0	17.1	14.0	1.1	15.4	13.6	1.2	13.8	13.0	1.4	12.2	12.1	1.6	10.7	10.7	1.8
	72 (22.2)	20.2	11.7	1.0	18.7	11.0	1.1	16.8	10.7	1.3	15.0	10.1	1.4	13.3	9.3	1.7	11.6	8.0	1.9
700/.06	57 (13.8)	17.0	16.3	1.0	15.9	15.3	1.1	14.4	14.2	1.2	13.0	12.7	1.4	11.7	11.4	1.6	10.4	10.3	1.8
	62 (16.6)	17.2	16.5	1.0	15.9	15.3	1.1	14.4	14.2	1.2	13.0	12.7	1.4	11.7	11.4	1.6	10.4	10.3	1.8
	63* (17.2)	17.4	13.5	1.0	16.0	13.0	1.1	14.4	12.9	1.2	12.9	12.3	1.4	11.4	11.2	1.6	10.0	9.9	1.8
	67 (19.4)	18.7	14.1	1.0	17.2	13.5	1.1	15.5	13.5	1.2	13.8	12.8	1.4	12.3	11.4	1.6	10.7	10.6	1.8
	72 (22.2)	20.3	11.3	1.0	18.8	10.7	1.1	16.9	10.6	1.3	15.1	10.0	1.4	13.4	9.2	1.7	11.7	8.0	1.9

See Legend and Notes on page 18.

024 Low Heat

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																				
		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
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65°F (18.3°C)	525	4.9	4.5	0.9	5.7	5.3	1.0	7.3	6.6	1.0	10.4	9.1	1.0	13.1	13.1	1.1	16.2	16.2	1.2	20.2	20.2	1.2
	675	4.9	4.6	0.9	5.8	5.3	1.0	7.4	6.7	1.0	10.5	9.2	1.0	13.2	13.2	1.1	16.3	16.3	1.1	20.4	20.4	1.2
	700	5.0	4.6	0.9	5.8	5.4	0.9	7.4	6.7	1.0	10.6	9.2	1.0	13.2	13.2	1.1	16.5	16.5	1.1	20.5	20.5	1.1
70°F (21.1°C)	525	4.8	4.4	1.0	5.6	5.1	1.0	7.1	6.4	1.1	10.1	8.9	1.1	12.7	12.7	1.2	15.7	15.7	1.2	19.7	19.7	1.3
	675	4.8	4.4	1.0	5.7	5.2	1.0	7.2	6.6	1.1	10.3	9.3	1.1	12.9	12.9	1.1	15.9	15.6	1.2	19.9	19.9	1.2
	700	4.8	4.5	0.9	5.7	5.2	1.0	7.2	6.5	1.0	10.3	9.0	1.0	12.9	12.9	1.1	16.1	16.1	1.1	19.9	19.9	1.2
75°F (23.9°C)	525	4.7	4.3	1.0	5.5	5.0	1.1	7.0	6.3	1.1	10.0	8.8	1.1	12.6	12.6	1.2	15.6	15.6	1.3	19.5	19.5	1.3
	675	4.7	4.3	1.0	5.5	5.1	1.0	7.0	6.4	1.1	10.1	8.9	1.1	12.7	12.7	1.2	15.8	15.8	1.2	19.7	19.7	1.3
	700	4.8	4.4	1.0	5.6	5.1	1.0	7.1	6.4	1.1	10.2	8.9	1.1	12.8	12.8	1.1	15.9	15.9	1.2	19.7	19.7	1.2

See Legend and Notes on page 18.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Performance Data (Continued)

036 High Cool

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM/BF	EWB	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/.08	57 (13.8)	35.9	35.9	2.4	32.9	32.9	2.5	31.4	31.4	2.8	29.2	29.2	3.0	26.9	26.9	3.4	24.2	24.2	3.8
	62 (16.6)	37.3	33.4	2.4	33.8	31.7	2.5	32.3	29.9	2.8	30.0	27.6	3.0	27.7	25.6	3.4	24.9	22.2	3.8
	63* (17.2)	38.1	26.9	2.4	34.5	25.3	2.5	32.6	24.5	2.8	29.9	23.5	3.0	27.3	22.5	3.4	24.1	20.7	3.8
	67 (19.4)	41.0	28.0	2.4	37.1	26.4	2.5	35.0	25.5	2.8	32.2	24.5	3.0	29.4	23.4	3.4	25.9	21.6	3.8
	72 (22.2)	44.6	22.4	2.4	40.4	20.8	2.5	38.3	20.1	2.8	35.1	19.1	3.0	32.0	18.1	3.4	28.2	16.4	3.8
1200/.09	57 (13.8)	37.7	36.1	2.4	34.5	33.2	2.5	32.9	31.1	2.8	30.6	28.7	3.0	28.2	26.6	3.5	25.4	23.1	3.8
	62 (16.6)	38.1	34.7	2.4	34.5	32.9	2.5	32.9	31.1	2.8	30.6	28.7	3.0	28.2	26.6	3.5	25.4	23.1	3.8
	63* (17.2)	38.5	28.0	2.4	34.9	26.3	2.5	33.0	25.4	2.8	30.3	24.4	3.0	27.7	23.4	3.5	24.4	21.5	3.8
	67 (19.4)	41.4	29.1	2.4	37.5	27.4	2.6	35.4	26.5	2.8	32.6	25.4	3.0	29.7	24.4	3.5	26.2	22.4	3.8
	72 (22.2)	45.1	23.3	2.5	40.9	21.7	2.6	38.7	20.8	2.9	35.5	19.8	3.1	32.4	18.8	3.5	28.6	17.0	3.9
1350/.10	57 (13.8)	39.0	38.6	2.5	35.7	35.4	2.6	34.0	33.3	2.9	31.7	30.7	3.1	29.2	28.4	3.5	26.3	24.7	3.9
	62 (16.6)	39.4	37.4	2.5	35.7	35.1	2.6	34.1	33.3	2.9	31.7	30.7	3.1	29.2	28.4	3.5	26.3	24.7	3.9
	63* (17.2)	39.9	29.9	2.5	36.1	28.1	2.6	34.1	27.2	2.9	31.3	26.1	3.1	28.6	25.0	3.5	25.2	23.0	3.9
	67 (19.4)	42.9	31.1	2.5	38.8	29.3	2.6	36.6	28.3	2.9	33.7	27.2	3.1	30.8	26.0	3.5	27.1	24.0	3.9
	72 (22.2)	46.7	24.9	2.5	42.3	23.1	2.6	40.0	22.3	2.9	36.7	21.2	3.1	33.5	20.0	3.5	29.6	18.2	3.9

See Legend and Notes on page 18.

036 High Heat

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE																					
		-10°F (-23.3°C)			0°F (-17.8°C)			10°F (-12.2°C)			20°F (-6.7°C)			30°F (-1.1°C)			40°F (4.4°C)			50°F (8.3°C)			60°F (15.6°C)		
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°F (18.3°C)	1050	9.2	8.5	2.3	12.1	11.1	2.4	16.6	15.3	2.5	21.1	19.1	2.6	23.6	20.6	2.7	29.5	29.5	2.8	36.6	36.6	3.0	38.7	38.7	3.2
	1200	9.3	8.6	2.3	12.2	11.2	2.3	16.8	15.5	2.4	21.3	19.3	2.5	23.8	20.9	2.6	29.8	29.8	2.7	37.0	37.0	2.9	39.1	39.1	3.0
	1350	9.5	8.7	2.3	12.4	11.4	2.4	17.0	15.6	2.5	21.5	19.4	2.5	24.0	21.0	2.6	30.0	30.0	2.7	37.3	37.3	2.9	39.3	39.3	3.0
70°F (21.1°C)	1050	8.9	8.2	2.4	11.7	10.8	2.5	16.2	14.9	2.6	20.5	18.6	2.7	22.9	20.1	2.8	28.8	28.8	2.9	35.6	35.6	3.1	37.7	37.7	3.3
	1200	9.1	8.3	2.4	11.9	10.9	2.4	16.4	15.1	2.5	20.7	19.1	2.6	23.2	21.0	2.7	29.1	29.1	2.8	36.0	36.0	3.0	38.1	38.1	3.2
	1350	9.2	8.5	2.4	12.0	11.1	2.5	16.5	15.2	2.5	20.9	18.9	2.6	23.3	20.5	2.7	29.2	29.2	2.8	36.4	36.4	3.0	38.2	38.2	3.2
75°F (23.9°C)	1050	8.8	8.1	2.5	11.5	10.6	2.6	15.9	14.6	2.7	20.1	18.2	2.8	22.7	19.9	2.9	28.5	28.5	3.1	35.3	35.3	3.2	37.3	37.3	3.4
	1200	8.9	8.2	2.5	11.6	10.7	2.5	16.0	14.8	2.6	20.3	18.4	2.7	23.0	20.1	2.8	28.8	28.8	2.9	35.6	35.6	3.1	37.7	37.7	3.3
	1350	9.0	8.3	2.5	11.8	10.9	2.6	16.2	14.9	2.6	20.5	18.5	2.7	23.1	20.2	2.8	28.9	28.9	2.9	36.0	36.0	3.1	37.8	37.8	3.3

See Legend and Notes on page 18.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Performance Data (Continued)

036 Low Cool

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	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	
775/.04	57 (13.8)	24.2	24.2	1.4	23.2	23.2	1.7	21.3	21.3	1.9	19.3	19.3	2.2	17.4	17.4	2.5	15.6	15.6	2.7
	62 (16.6)	25.1	23.2	1.4	23.9	22.7	1.7	21.9	21.9	1.9	19.8	19.8	2.2	17.9	17.9	2.5	16.0	16.0	2.7
	63* (17.2)	25.6	18.7	1.4	24.4	18.1	1.7	22.1	16.5	1.9	19.8	15.2	2.2	17.7	15.0	2.5	15.5	14.8	2.7
	67 (19.4)	27.5	19.5	1.4	26.2	18.9	1.7	23.8	17.2	2.0	21.3	15.8	2.2	19.0	15.6	2.5	16.7	15.4	2.7
	72 (22.2)	30.0	15.6	1.5	28.5	14.9	1.7	26.0	13.5	2.0	23.2	12.3	2.2	20.7	12.0	2.5	18.2	11.6	2.8
900/.05	57 (13.8)	25.8	25.6	1.5	24.8	24.1	1.7	22.7	21.3	2.0	20.6	18.9	2.2	18.5	18.0	2.5	16.6	16.6	2.8
	62 (16.6)	26.0	24.5	1.5	24.8	23.9	1.7	22.7	21.3	2.0	20.6	18.9	2.2	18.5	18.0	2.5	16.6	16.6	2.8
	63 (17.2)	26.3	19.8	1.5	25.0	19.2	1.7	22.7	17.4	2.0	20.4	16.0	2.2	18.2	15.8	2.5	15.9	15.6	2.8
	67 (19.4)	28.3	20.6	1.5	26.9	20.0	1.7	24.4	18.1	2.0	21.9	16.7	2.2	19.5	16.5	2.5	17.2	16.3	2.8
	72 (22.2)	30.9	16.5	1.5	29.3	15.8	1.8	26.7	14.3	2.0	23.9	13.0	2.3	21.3	12.7	2.5	18.7	12.2	2.8
1025/.06	57 (13.8)	27.0	27.0	1.5	25.9	25.9	1.8	23.8	23.0	2.0	21.6	20.4	2.3	19.4	19.4	2.6	17.4	17.4	2.8
	62 (16.6)	27.3	26.8	1.5	25.9	25.9	1.8	23.8	23.0	2.0	21.6	20.4	2.3	19.4	19.4	2.6	17.4	17.4	2.8
	63* (17.2)	27.6	21.4	1.5	26.2	20.7	1.8	23.8	18.8	2.0	21.3	17.3	2.3	19.0	17.1	2.6	16.7	16.7	2.8
	67 (19.4)	29.7	22.3	1.5	28.2	21.6	1.8	25.6	19.6	2.0	22.9	18.1	2.3	20.5	17.8	2.6	18.0	17.6	2.8
	72 (22.2)	32.3	17.8	1.5	30.7	17.1	1.8	28.0	15.4	2.1	25.0	14.1	2.3	22.3	13.7	2.6	19.6	13.2	2.9

See Legend and Notes on page 18.

036 Low Heat

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																	
		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
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65°F (18.3°C)	775	7.6	7.0	1.8	10.5	9.7	1.9	13.3	12.0	2.0	16.2	14.2	2.0	20.3	20.3	2.2	25.2	25.2	2.2	31.5	31.5	2.4
	900	7.7	7.1	1.7	10.6	9.8	1.7	13.5	12.2	1.8	16.4	14.4	1.8	20.6	20.6	1.9	25.5	25.5	2.0	31.8	31.8	2.1
	1025	7.8	7.2	1.7	10.8	9.9	1.8	13.6	12.3	1.9	16.5	14.5	1.9	20.7	20.7	2.0	25.7	25.7	2.0	32.0	32.0	2.1
70°F (21.1°C)	775	7.4	6.8	1.9	10.2	9.4	2.0	13.0	11.7	2.1	15.8	13.8	2.1	19.8	19.8	2.2	24.5	24.5	2.3	30.7	30.7	2.5
	900	7.5	6.9	1.7	10.3	9.5	1.8	13.1	12.1	1.9	16.0	14.4	1.9	20.0	20.0	2.0	24.8	24.8	2.1	31.0	31.0	2.2
	1025	7.6	7.0	1.8	10.5	9.6	1.8	13.2	12.0	1.9	16.1	14.1	2.0	20.2	20.2	2.0	25.0	25.0	2.1	31.1	31.1	2.2
75°F (23.9°C)	775	7.3	6.7	2.0	10.0	9.2	2.1	12.7	11.5	2.2	15.6	13.7	2.2	19.6	19.6	2.3	24.3	24.3	2.4	30.4	30.4	2.6
	900	7.4	6.8	1.8	10.1	9.3	1.9	12.8	11.6	2.0	15.8	13.8	2.0	19.8	19.8	2.1	24.5	24.5	2.2	30.7	30.7	2.3
	1025	7.5	6.9	1.8	10.3	9.5	1.9	13.0	11.7	2.0	15.9	14.0	2.0	20.0	20.0	2.1	24.8	24.8	2.2	30.8	30.8	2.3

See Legend and Notes on page 18.

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Performance Data (Continued)

048 High Cool

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.5)			115 (46.1)			125 (51.7)		
CFM/BF	EWB	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/.09	57 (13.9)	46.0	46.0	3.1	44.0	44.0	3.5	41.2	41.2	3.8	37.3	37.3	4.1	36.0	36.0	4.7	30.5	30.5	5.0
	62 (16.7)	47.8	42.7	3.1	45.2	42.6	3.5	42.4	39.3	3.8	38.3	36.2	4.1	37.0	33.6	4.7	31.4	29.7	5.0
	63* (17.2)	48.7	34.4	3.1	46.1	34.1	3.5	42.8	32.1	3.8	38.3	30.7	4.1	36.6	29.6	4.7	30.4	27.7	5.0
	67 (19.4)	52.4	35.9	3.2	49.6	35.5	3.5	46.0	33.5	3.9	41.1	32.0	4.1	39.3	30.8	4.7	32.6	28.9	5.0
	72 (13.9)	57.1	28.7	3.2	54.0	28.0	3.5	50.3	26.3	3.9	44.9	25.0	4.2	42.8	23.7	4.8	35.6	21.9	5.1
1600/.10	57 (13.9)	48.2	46.2	3.2	46.1	44.6	3.5	43.2	40.9	3.9	39.1	37.6	4.2	37.8	34.9	4.8	32.0	30.9	5.1
	62 (16.7)	48.8	44.3	3.2	46.1	44.2	3.5	43.2	40.9	3.9	39.1	37.6	4.2	37.8	34.9	4.8	32.0	30.9	5.1
	63* (17.2)	49.3	35.8	3.2	46.6	35.4	3.5	43.3	33.4	3.9	38.7	31.9	4.2	37.0	30.7	4.8	30.7	28.8	5.1
	67 (19.4)	53.0	37.2	3.2	50.1	36.9	3.6	46.5	34.8	3.9	41.6	33.2	4.2	39.8	32.0	4.8	33.0	30.0	5.1
	72 (13.9)	57.8	29.8	3.3	54.6	29.1	3.6	50.8	27.4	4.0	45.4	25.9	4.2	43.3	24.6	4.8	36.0	22.8	5.2
1800/.11	57 (13.9)	49.9	49.4	3.3	47.7	47.7	3.6	44.7	43.7	3.9	40.5	40.2	4.3	39.1	37.3	4.8	33.1	33.0	5.2
	62 (16.7)	50.5	47.9	3.3	47.7	47.3	3.6	44.8	43.7	3.9	40.5	40.2	4.3	39.1	37.3	4.8	33.1	33.0	5.2
	63* (17.2)	51.0	38.2	3.3	48.2	37.8	3.6	44.8	35.7	3.9	40.1	34.1	4.3	38.3	32.8	4.8	31.8	30.8	5.2
	67 (19.4)	54.9	39.8	3.3	51.9	39.4	3.6	48.1	37.2	4.0	43.1	35.5	4.3	41.1	34.2	4.8	34.2	32.0	5.2
	72 (13.9)	59.8	31.8	3.3	56.6	31.1	3.7	52.6	29.3	4.0	47.0	27.7	4.3	44.9	26.3	4.9	37.2	24.4	5.2

See Legend and Notes on page 18.

048 High Heat

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE																							
		-10°F (-23.3°C)			0°F (-17.8°C)			10°F (-12.2°C)			20°F (-6.7°C)			30°F (-1.1°C)			40°F (4.4°C)			50°F (8.3°C)			60°F (15.6°C)		
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°F (18.3°C)	1400	11.8	10.9	2.8	15.5	14.3	2.9	21.4	19.7	3.0	27.1	24.5	3.1	33.0	28.9	3.3	39.9	39.9	3.4	47.0	47.0	3.8	52.0	52.0	4.2
	1600	12.0	11.0	2.8	15.7	14.4	2.9	21.6	19.9	3.0	27.4	24.8	3.1	33.4	29.2	3.2	40.3	40.3	3.3	47.5	47.5	3.6	52.6	52.6	4.0
	1800	12.2	11.2	2.9	15.9	14.6	2.9	21.8	20.1	3.0	27.6	25.0	3.1	33.6	29.4	3.2	40.5	40.5	3.4	48.0	48.0	3.7	52.8	52.8	4.0
70°F (21.1°C)	1400	11.5	10.6	2.9	15.1	13.9	3.0	20.8	19.2	3.2	26.4	23.9	3.3	32.2	28.2	3.4	38.8	38.8	3.6	45.8	45.8	3.9	50.6	50.6	4.4
	1600	11.6	10.7	2.9	15.3	14.1	3.0	21.1	19.4	3.1	26.7	24.5	3.2	32.5	29.4	3.3	39.2	39.2	3.5	46.3	46.3	3.8	51.2	51.2	4.2
	1800	11.9	10.9	3.0	15.5	14.3	3.0	21.3	19.6	3.1	26.9	24.3	3.2	32.7	28.7	3.4	39.5	39.5	3.5	46.8	46.8	3.8	51.4	51.4	4.2
75°F (23.9°C)	1400	11.3	10.4	3.1	14.8	13.6	3.2	20.4	18.8	3.3	25.9	23.4	3.4	31.8	27.9	3.5	38.4	38.4	3.7	45.3	45.3	4.1	50.1	50.1	4.6
	1600	11.4	10.5	3.0	15.0	13.8	3.1	20.6	19.0	3.2	26.1	23.7	3.3	32.2	28.2	3.4	38.9	38.9	3.6	45.8	45.8	3.9	50.7	50.7	4.4
	1800	11.6	10.7	3.1	15.2	14.0	3.2	20.8	19.2	3.3	26.4	23.9	3.4	32.4	28.4	3.5	39.1	39.1	3.6	46.3	46.3	3.9	50.9	50.9	4.4

See Legend and Notes on page 18.

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Performance Data (Continued)

048 Low Cool

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	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/.05	57 (13.8)	34.0	34.0	1.9	31.3	31.3	2.3	28.7	28.7	2.6	24.1	24.1	2.8	23.5	23.5	3.3	21.9	21.9	3.8
	62 (16.6)	35.3	33.0	1.9	32.2	31.4	2.3	29.5	29.5	2.6	24.8	24.8	2.8	24.1	24.1	3.3	22.5	22.5	3.8
	63* (17.2)	36.0	26.6	1.9	32.8	25.1	2.3	29.8	23.3	2.6	24.7	21.0	2.8	23.8	20.5	3.3	21.8	20.0	3.8
	67 (19.4)	38.7	27.7	1.9	35.3	26.2	2.3	32.1	24.3	2.7	26.6	21.9	2.8	25.6	21.4	3.3	23.4	20.8	3.8
	72 (22.2)	42.2	22.2	1.9	38.5	20.7	2.4	35.0	19.1	2.7	29.0	17.1	2.8	27.9	16.5	3.3	25.5	15.6	3.9
1200/.06	57 (13.8)	35.6	35.6	1.9	32.9	32.9	2.4	30.1	29.7	2.7	25.3	25.3	2.8	24.6	24.2	3.3	23.0	22.3	3.9
	62 (16.6)	36.0	34.3	1.9	32.9	32.6	2.4	30.2	29.7	2.7	25.3	25.3	2.8	24.6	24.2	3.3	23.0	22.3	3.9
	63* (17.2)	36.4	27.7	1.9	33.2	26.1	2.4	30.2	24.2	2.7	25.0	21.8	2.8	24.1	21.3	3.3	22.0	20.8	3.9
	67 (19.4)	39.1	28.8	1.9	35.7	27.2	2.4	32.4	25.2	2.7	26.9	22.8	2.8	25.9	22.2	3.3	23.7	21.6	3.9
	72 (22.2)	42.6	23.1	2.0	38.9	21.5	2.4	35.4	19.9	2.8	29.3	17.7	2.8	28.2	17.1	3.3	25.8	16.2	3.9
1350/.06	57 (13.8)	36.8	36.8	2.0	34.0	34.0	2.4	31.2	31.2	2.7	26.2	26.2	2.9	25.5	25.5	3.4	23.8	23.8	3.9
	62 (16.6)	37.3	37.0	2.0	34.0	34.0	2.4	31.2	31.2	2.7	26.2	26.2	2.9	25.5	25.5	3.4	23.8	23.8	3.9
	63* (17.2)	37.7	29.6	2.0	34.4	27.9	2.4	31.2	25.9	2.7	25.9	23.3	2.9	24.9	22.8	3.4	22.8	22.2	3.9
	67 (19.4)	40.5	30.8	2.0	37.0	29.1	2.4	33.6	27.0	2.8	27.8	24.3	2.9	26.8	23.7	3.4	24.5	23.1	3.9
	72 (22.2)	44.1	24.6	2.0	40.3	23.0	2.4	36.7	21.2	2.8	30.4	19.0	2.9	29.2	18.3	3.4	26.7	17.3	4.0

See Legend and Notes on page 18.

048 Low Heat

Indoor Air		Outdoor Coil Entering Air Temperatures °F (°C)																	
		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
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	1050	10.3	9.5	2.2	12.7	11.6	2.3	18.0	16.3	2.4	22.2	19.4	2.4	27.6	27.6	2.6	32.9	32.9	2.9	37.7	37.7	3.0
	1200	10.4	9.6	2.0	12.8	11.8	2.1	18.2	16.5	2.2	22.4	19.6	2.2	27.8	27.8	2.3	33.3	33.3	2.6	38.1	38.1	2.7
	1350	10.6	9.7	2.0	13.0	11.9	2.1	18.4	16.7	2.2	22.6	19.8	2.2	28.0	28.0	2.3	33.6	33.6	2.6	38.2	38.2	2.7
70 (21.1)	1050	10.0	9.2	2.3	12.3	11.3	2.4	17.6	15.9	2.5	21.6	18.9	2.5	26.8	26.8	2.7	32.1	32.1	3.0	36.7	36.7	3.1
	1200	10.1	9.3	2.1	12.5	11.5	2.1	17.8	16.3	2.3	21.8	19.7	2.3	27.1	27.1	2.4	32.4	32.4	2.7	37.1	37.1	2.8
	1350	10.3	9.5	2.1	12.6	11.6	2.2	17.9	16.2	2.3	22.0	19.3	2.3	27.3	27.3	2.4	32.7	32.7	2.7	37.2	37.2	2.8
75 (23.9)	1050	9.8	9.0	2.4	12.1	11.1	2.5	17.2	15.6	2.6	21.4	18.7	2.7	26.6	26.6	2.8	31.7	31.7	3.1	36.3	36.3	3.3
	1200	9.9	9.1	2.1	12.2	11.2	2.2	17.4	15.8	2.4	21.6	18.9	2.4	26.8	26.8	2.5	32.1	32.1	2.8	36.7	36.7	2.9
	1350	10.1	9.3	2.2	12.4	11.4	2.3	17.6	15.9	2.4	21.8	19.1	2.4	27.0	27.0	2.5	32.4	32.4	2.8	36.9	36.9	2.9

See Legend and Notes on page 18.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Performance Data (Continued)

060 High Cool

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.5)			115 (46.1)			125 (51.7)		
CFM/BF	EWB	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	
1675/.07	57 (13.9)	56.8	56.8	3.8	55.1	55.1	4.1	51.7	51.7	4.6	41.9	41.9	4.9	38.2	38.2	5.1	35.1	35.1	5.5
	62 (16.7)	59.1	53.5	3.8	56.7	51.2	4.1	53.3	48.5	4.6	43.1	40.3	4.9	39.3	37.7	5.1	36.1	33.9	5.5
	63* (17.2)	60.3	43.1	3.8	57.8	41.0	4.1	53.9	39.6	4.6	43.1	34.3	4.9	38.9	33.2	5.1	35.0	31.6	5.5
	67 (19.4)	64.8	44.9	3.8	62.2	42.7	4.2	57.9	41.3	4.6	46.3	35.7	4.9	41.8	34.6	5.1	37.6	32.9	5.5
	72 (13.9)	70.6	36.0	3.8	66.5	33.7	4.2	59.5	32.5	4.7	50.5	27.8	4.9	45.5	26.6	5.2	41.0	25.0	5.6
1750/.07	57 (13.9)	57.6	55.5	3.8	55.9	51.4	4.2	52.5	48.2	4.6	42.5	40.1	4.9	38.8	37.5	5.2	35.6	33.7	5.5
	62 (16.7)	58.2	53.2	3.8	55.9	51.0	4.2	52.5	48.2	4.6	42.5	40.1	4.9	38.8	37.5	5.2	35.6	33.7	5.5
	63* (17.2)	58.9	42.9	3.8	56.5	40.8	4.2	52.6	39.4	4.6	42.0	34.1	4.9	37.9	33.0	5.2	34.2	31.4	5.5
	67 (19.4)	63.3	44.7	3.8	60.7	42.5	4.2	56.5	41.0	4.7	45.2	35.5	4.9	40.8	34.4	5.2	36.7	32.7	5.5
	72 (13.9)	69.0	35.8	3.9	66.2	33.6	4.2	61.8	32.3	4.7	49.3	27.7	4.9	44.5	26.5	5.2	40.0	24.9	5.6
2000/.08	57 (13.9)	59.2	59.2	3.9	57.5	55.8	4.2	54.0	52.4	4.7	43.7	43.6	5.0	39.9	39.9	5.3	36.6	36.6	5.6
	62 (16.7)	59.9	58.4	3.9	57.5	55.4	4.2	54.0	52.4	4.7	43.7	43.6	5.0	39.9	39.9	5.3	36.6	36.6	5.6
	63* (17.2)	60.5	46.6	3.9	58.1	44.3	4.2	54.1	42.8	4.7	43.2	37.0	5.0	39.0	35.9	5.3	35.1	34.1	5.6
	67 (19.4)	65.1	48.6	3.9	62.5	46.1	4.3	58.1	44.6	4.7	46.5	38.5	5.0	42.0	37.3	5.3	37.8	35.5	5.6
	72 (13.9)	70.9	38.8	3.9	68.1	36.4	4.3	63.5	35.1	4.8	50.7	30.1	5.0	45.7	28.8	5.3	41.2	27.0	5.7

See Legend and Notes on page 18.

060 High Heat

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURE																					
		-10°F (-23.3°C)			0°F (-17.8°C)			10°F (-12.2°C)			20°F (-6.7°C)			30°F (-1.1°C)			40°F (4.4°C)			50°F (8.3°C)			60°F (15.6°C)		
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°F (18.3°C)	1675	18.0	16.5	3.3	20.9	19.2	3.5	32.3	29.7	3.8	36.7	33.2	4.1	37.4	32.7	4.3	47.0	47.0	4.6	59.8	59.8	5.5	62.6	62.6	5.8
	1750	18.2	16.7	3.1	21.1	19.4	3.3	32.6	30.0	3.6	37.1	33.6	3.8	37.8	33.1	4.0	47.4	47.4	4.2	60.4	60.4	5.1	63.3	63.3	5.3
	2000	18.4	17.0	3.2	21.4	19.7	3.4	32.9	30.3	3.6	37.4	33.8	3.9	38.0	33.3	4.0	47.7	47.7	4.3	61.0	61.0	5.1	63.5	63.5	5.3
70°F (21.1°C)	1675	17.5	16.1	3.5	20.4	18.7	3.7	31.4	28.9	4.0	35.7	32.3	4.3	36.4	31.9	4.5	45.7	45.7	4.8	58.2	58.2	5.8	61.0	61.0	6.0
	1750	17.7	16.3	3.2	20.6	18.9	3.4	31.8	29.2	3.7	36.1	33.2	4.0	36.8	33.3	4.2	46.2	46.2	4.4	58.8	58.8	5.3	61.6	61.6	5.6
	2000	18.0	16.5	3.3	20.9	19.2	3.5	32.0	29.5	3.8	36.4	32.9	4.0	37.0	32.4	4.2	46.5	46.5	4.4	59.4	59.4	5.3	61.9	61.9	5.6
75°F (23.9°C)	1675	17.2	15.8	3.6	20.0	18.4	3.9	30.8	28.3	4.1	35.0	31.7	4.4	36.0	31.6	4.7	45.3	45.3	5.0	57.6	57.6	6.0	60.4	60.4	6.3
	1750	17.3	16.0	3.4	20.2	18.6	3.6	31.1	28.6	3.8	35.4	32.0	4.1	36.4	31.9	4.3	45.7	45.7	4.6	58.2	58.2	5.5	61.0	61.0	5.8
	2000	17.6	16.2	3.5	20.4	18.8	3.7	31.4	28.9	3.9	35.7	32.3	4.2	36.7	32.1	4.4	46.0	46.0	4.6	58.8	58.8	5.5	61.3	61.3	5.8

See Legend and Notes on page 18.

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Performance Data (Continued)

060 Low Cool

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	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	
1200/04	57 (13.8)	38.8	38.8	2.2	36.7	36.7	2.7	33.3	33.3	3.1	25.4	25.4	3.2	22.5	22.5	3.5	20.4	20.4	3.9
	62 (16.6)	40.3	37.5	2.2	37.7	36.0	2.7	34.3	34.3	3.1	26.1	26.1	3.2	23.2	23.2	3.5	21.0	21.0	3.9
	63* (17.2)	41.1	30.3	2.2	38.5	28.8	2.7	34.6	26.8	3.1	26.0	23.9	3.2	22.9	22.3	3.5	20.3	19.1	3.9
	67 (19.4)	44.2	31.5	2.2	41.4	30.0	2.8	37.2	27.9	3.2	28.0	24.9	3.2	24.6	23.3	3.5	21.8	19.9	3.9
	72 (22.2)	48.2	25.2	2.2	45.1	23.7	2.8	40.6	21.9	3.2	30.5	19.4	3.2	26.8	17.9	3.6	23.8	14.9	4.0
1400/.04	57 (13.8)	41.5	41.5	2.3	39.3	38.5	2.8	35.6	34.7	3.2	27.2	27.2	3.3	24.1	24.1	3.6	21.8	21.7	4.0
	62 (16.6)	42.0	39.8	2.3	39.3	38.2	2.8	35.7	34.7	3.2	27.2	27.2	3.3	24.1	24.1	3.6	21.8	21.7	4.0
	63* (17.2)	42.4	32.1	2.3	39.7	30.6	2.8	35.7	28.4	3.2	26.9	25.4	3.3	23.6	23.6	3.6	20.9	20.3	4.0
	67 (19.4)	45.6	33.5	2.3	42.7	31.8	2.8	38.4	29.6	3.2	28.9	26.4	3.3	25.4	24.7	3.6	22.5	21.1	4.0
	72 (22.2)	49.7	26.8	2.3	46.5	25.2	2.9	41.9	23.3	3.3	31.5	20.6	3.3	27.7	19.0	3.6	24.5	15.8	4.0
1550/.05	57 (13.8)	42.3	42.3	2.3	40.0	40.0	2.8	36.3	36.3	3.3	27.7	27.7	3.3	24.6	24.6	3.6	22.2	22.2	4.0
	62 (16.6)	42.8	42.3	2.3	40.0	40.0	2.8	36.3	36.3	3.3	27.7	27.7	3.3	24.6	24.6	3.6	22.2	22.2	4.0
	63* (17.2)	43.2	33.8	2.3	40.5	32.1	2.8	36.4	29.8	3.3	27.4	26.7	3.3	24.1	24.1	3.6	21.3	21.3	4.0
	67 (19.4)	46.5	35.2	2.3	43.5	33.5	2.9	39.1	31.1	3.3	29.4	27.8	3.3	25.9	25.9	3.6	22.9	22.2	4.0
	72 (22.2)	50.7	28.2	2.4	47.4	26.5	2.9	42.7	24.5	3.3	32.1	21.7	3.4	28.2	20.0	3.7	25.0	16.7	4.1

See Legend and Notes on page 18

060 Low Heat

Indoor Air		Outdoor Coil Entering Air Temperatures °F (°C)																	
		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
		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ		Total	Integ	
65 (18.3)	1200	13.7	12.6	2.69	18.8	17.3	2.80	23.1	20.9	2.98	26.6	23.3	3.01	33.7	33.7	3.17	40.7	40.7	3.44	46.6	46.6	3.72
	1400	13.9	12.7	2.46	19.0	17.5	2.55	23.4	21.1	2.70	26.9	23.6	2.73	34.0	34.0	2.86	41.2	41.2	3.09	47.1	47.1	3.32
	1550	14.0	12.9	2.49	19.2	17.6	2.58	23.5	21.3	2.72	27.1	23.7	2.75	34.2	34.2	2.87	41.6	41.6	3.09	47.3	47.3	3.31
70 (21.1)	1200	13.3	12.3	2.82	18.3	16.8	2.93	22.5	20.4	3.11	25.9	22.7	3.15	32.8	32.8	3.31	39.7	39.7	3.59	45.4	45.4	3.89
	1400	13.5	12.4	2.56	18.5	17.0	2.66	22.7	20.9	2.81	26.2	23.7	2.84	33.1	33.1	2.98	40.1	40.1	3.21	45.9	45.9	3.46
	1550	13.7	12.6	2.59	18.7	17.2	2.68	22.9	20.7	2.83	26.4	23.1	2.86	33.3	33.3	2.99	40.5	40.5	3.21	46.0	46.0	3.44
75 (23.9)	1200	13.1	12.0	2.94	17.9	16.5	3.05	22.0	19.9	3.25	25.7	22.5	3.29	32.5	32.5	3.46	39.3	39.3	3.75	44.9	44.9	4.06
	1400	13.2	12.2	2.67	18.1	16.7	2.76	22.3	20.2	2.92	25.9	22.7	2.96	32.8	32.8	3.10	39.7	39.7	3.34	45.4	45.4	3.60
	1550	13.4	12.3	2.69	18.3	16.8	2.78	22.4	20.3	2.93	26.1	22.9	2.96	33.0	33.0	3.10	40.1	40.1	3.33	45.6	45.6	3.57

See Legend and Notes on page 18.

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Performance Data (Continued)

* 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.

LEGEND

BF — Bypass Factor
edb — Entering Dry-Bulb
ewb — Entering Wet-Bulb
KW — Total Unit Power Input
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:

$$t_{ldb} = t_{edb} - \frac{\text{Sensible Capacity (Btuh)}}{1.09 \times \text{CFM}}$$

t_{lwb} = 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 Sensible Capacity 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 Sensible Capacity. Above 80°F (26.7°C) edb, add (corr factor x CFM) to Sensible Capacity. Correction Factor = 1.09 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.

Multiplication Factors

HEATER kW RATING	VOLTAGE DISTRIBUTION V/3/60	MULTIPLICATION FACTOR
240	200	0.69
	208	0.75
	230	0.92
	240	1.00

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Dry Coil Air Delivery* - Horizontal and Downflow Discharge Sizes 24-60 208-230VAC - 1 Phase/3 Phase

Unit Size	Motor Speed	Tap		ESP (in. W.C.)									
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
024	Low	Blue	CFM	747	663	575	473	370	289	179	NA	NA	NA
			BHP	0.10	0.11	0.11	0.12	0.12	0.13	0.13	NA	NA	NA
	Med-Low**	Pink	CFM	864	790	716	637	552	468	366	295	203	NA
			BHP	0.15	0.14	0.14	0.15	0.15	0.16	0.17	0.17	0.18	NA
	Medium	Red	CFM	1063	994	929	866	803	741	673	610	528	453
			BHP	0.21	0.22	0.23	0.23	0.24	0.25	0.25	0.26	0.26	0.27
	Med-High‡	Orange	CFM	1134	1077	1020	962	904	842	777	704	634	565
			BHP	0.27	0.27	0.28	0.29	0.30	0.30	0.31	0.32	0.32	0.33
	High	Black	CFM	1236	1187	1133	1079	1026	969	911	849	785	713
			BHP	0.33	0.34	0.35	0.35	0.36	0.37	0.38	0.39	0.39	0.39
036	Low**	Blue	CFM	1028	964	901	838	774	711	647	588	532	484
			BHP	0.12	0.13	0.14	0.15	0.15	0.16	0.17	0.18	0.19	0.19
	Med-Low	Pink	CFM	1164	1107	1051	995	939	882	824	767	711	656
			BHP	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.22	0.23	0.24
	Medium	Red	CFM	1391	1340	1294	1247	1199	1151	1104	1054	1003	946
			BHP	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34
	Med-High‡	Orange	CFM	1423	1377	1331	1288	1240	1192	1147	1097	1047	998
			BHP	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.35	0.36
	High	Black	CFM	1511	1466	1420	1378	1338	1293	1245	1200	1156	1109
			BHP	0.30	0.31	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40
048	Low	Blue	CFM	945	885	820	757	696	638	579	527	480	429
			BHP	0.11	0.12	0.12	0.13	0.14	0.15	0.16	0.16	0.17	0.18
	Med-Low**	Pink	CFM	1297	1253	1207	1163	1115	1066	1018	974	931	888
			BHP	0.23	0.24	0.24	0.26	0.27	0.27	0.28	0.29	0.30	0.31
	Medium‡	Red	CFM	1799	1759	1725	1676	1625	1584	1546	1509	1473	1437
			BHP	0.50	0.51	0.52	0.54	0.55	0.57	0.58	0.59	0.61	0.62
	Med-High	Orange	CFM	1936	1901	1864	1831	1798	1767	1736	1702	1670	1633
			BHP	0.63	0.64	0.65	0.66	0.68	0.69	0.70	0.71	0.73	0.74
	High	Black	CFM	1966	1933	1903	1872	1842	1811	1782	1751	1718	1619
			BHP	0.67	0.68	0.70	0.71	0.73	0.74	0.75	0.77	0.78	0.74
060	Low	Blue	CFM	897	829	764	699	641	583	521	463	407	356
			BHP	0.10	0.11	0.11	0.12	0.13	0.14	0.14	0.15	0.16	0.16
	Med-Low	Pink	CFM	1401	1364	1317	1271	1228	1189	1143	1097	1054	1012
			BHP	0.27	0.28	0.30	0.31	0.32	0.32	0.33	0.34	0.35	0.36
	Medium**	Red	CFM	1507	1472	1434	1388	1346	1307	1270	1227	1183	1142
			BHP	0.32	0.34	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42
	Med-High‡	Orange	CFM	1943	1905	1867	1818	1787	1743	1705	1664	1624	1587
			BHP	0.63	0.64	0.66	0.67	0.68	0.69	0.70	0.71	0.73	0.74
	High	Black	CFM	1969	1939	1909	1881	1852	1817	1781	1748	1710	1613
			BHP	0.66	0.67	0.69	0.71	0.72	0.74	0.75	0.76	0.77	0.73

Shaded areas indicate speed/static combinations that are permitted for dehumidification speed.

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

** - Factory Supplied Low Stage Cooling

‡ - Factory Supplied High Stage Cooling

NOTE: Deduct field-supplied air filter pressure drop and wet coil pressure drop to obtain static pressure available for ducting.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Dry Coil Air Delivery* - Horizontal and Downflow Discharge Sizes 36-60 460 VAC - 3 Phase

Unit Size	Motor Speed	Tap		ESP (in. W.C.)									
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
36	Low†	Blue	CFM	1064	965	899	837	772	714	662	605	570	516
			BHP	0.26	0.26	0.27	0.29	0.31	0.32	0.34	0.36	0.38	0.39
	Med-Low	Pink	CFM	1182	1124	1067	1007	954	898	847	797	749	699
			BHP	0.33	0.35	0.36	0.38	0.41	0.43	0.44	0.47	0.48	0.50
	Medium	Red	CFM	1414	1360	1311	1262	1212	1162	1114	1070	1024	980
			BHP	0.51	0.53	0.55	0.57	0.59	0.62	0.64	0.66	0.69	0.71
	Med-High**	Orange	CFM	1448	1395	1348	1295	1247	1199	1150	1111	1061	1019
			BHP	0.53	0.56	0.58	0.60	0.62	0.64	0.67	0.69	0.72	0.74
	High	Black	CFM	1534	1483	1434	1389	1340	1297	1253	1208	1166	1119
			BHP	0.62	0.64	0.67	0.69	0.71	0.73	0.76	0.79	0.81	0.83
48	Low†	Blue	CFM	1312	1264	1214	1165	1117	1070	1020	959	905	860
			BHP	0.41	0.43	0.45	0.47	0.48	0.50	0.51	0.54	0.55	0.57
	Med-Low	Pink	CFM	1416	1373	1324	1275	1230	1185	1138	1094	1037	988
			BHP	0.49	0.51	0.53	0.55	0.57	0.58	0.60	0.62	0.64	0.67
	Medium**	Red	CFM	1781	1748	1710	1675	1634	1597	1560	1523	1488	1455
			BHP	0.91	0.93	0.95	0.97	1.00	1.02	1.05	1.07	1.09	1.11
	Med-High	Orange	CFM	1852	1817	1784	1746	1709	1672	1636	1600	1564	1529
			BHP	1.02	1.04	1.00	1.09	1.11	1.14	1.16	1.19	1.20	1.22
	High	Black	CFM	1955	1920	1887	1852	1814	1785	1748	1710	1673	1640
			BHP	1.14	1.16	1.19	1.22	1.25	1.26	1.30	1.32	1.35	1.37
60	Low	Blue	CFM	1266	1205	1150	1097	1030	973	924	873	817	764
			BHP	0.42	0.43	0.45	0.47	0.48	0.51	0.52	0.54	0.56	0.58
	Med-Low†	Pink	CFM	1487	1436	1393	1340	1289	1238	1187	1140	1091	1045
			BHP	0.61	0.63	0.66	0.67	0.70	0.71	0.73	0.75	0.77	0.79
	Medium	Red	CFM	1844	1801	1759	1720	1684	1642	1603	1559	1511	1469
			BHP	1.07	1.09	1.12	1.14	1.15	1.20	1.22	1.23	1.26	1.28
	Med-High**	Orange	CFM	1945	1905	1869	1823	1788	1750	1711	1673	1635	1591
			BHP	1.24	1.25	1.28	1.31	1.34	1.36	1.39	1.41	1.44	1.46
	High	Black	CFM	2020	1983	1941	1906	1868	1833	1795	1753	1716	1661
			BHP	1.38	1.39	1.42	1.45	1.47	1.50	1.53	1.56	1.58	1.59

Notes:

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

† Factory Shipped Low Stage Cooling Speed

** Factory Shipped High Stage Cooling Speed

NOTE: Deduct field-supplied air filter pressure drop and wet coil pressure drop to obtain static pressure available for ducting.

Wet Coil Pressure Drop (IN. W.C.)

Unit Size	Standard CFM (SCFM)																
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
24	0.02	0.03	0.04	0.04	0.05	0.06											
36				0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.08	0.09	0.10	0.11			
48						0.03	0.04	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12
60						0.03	0.04	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

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

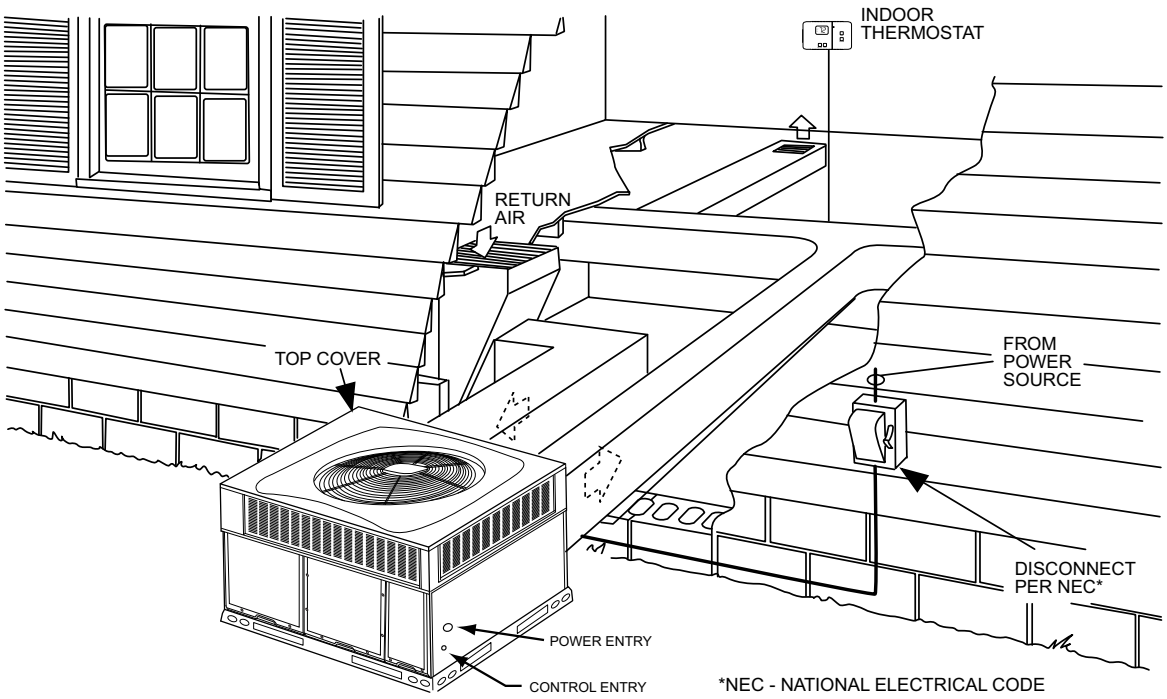
Filter Size in. (mm)	Cooling Tons	Standard CFM (SCFM)																
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
600-1400 CFM 12x20x1+12x20x1 (305x508x25+305x508x25)	2.0	0.04	0.05	0.07	0.09	0.14	0.16	0.18	0.25	-	-	-	-	-	-	-	-	-
1200-1800 CFM 16x24x1+14x24x1 (406x610x25+356x610x25)	3.0	-	-	-	0.04	0.06	0.07	0.08	0.10	0.11	0.12	0.13	0.14	0.16	0.16	-	-	-
1500-2200 CFM 16x24x1+18x24x1 (406x610x25+457x610x25)	4.0	-	-	-	-	-	-	0.08	0.10	0.11	0.13	0.15	0.17	0.18	0.20	0.21	0.22	-
1500-2200 CFM 16x24x1+18x24x1 (406x610x25+457x610x25)	5.0	-	-	-	-	-	-	0.08	0.10	0.11	0.13	0.15	0.17	0.18	0.20	0.21	0.22	0.23

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

Filter Size in. (mm)	Cooling Tons	Standard CFM (SCFM)																
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
600-1400 CFM 12x20x1+12x20x1 (305x508x25+305x508x25)	2.0	0.02	0.03	0.05	0.06	0.08	0.10	0.11	0.13	-	-	-	-	-	-	-	-	-
1200-1800 CFM 16x24x1+14x24x1 (406x610x25+356x610x25)	3.0	-	-	-	0.03	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.09	0.10	0.11	-	-	-
1500-2200 CFM 16x24x1+18x24x1 (406x610x25+457x610x25)	4.0	-	-	-	-	-	-	0.02	0.03	0.03	0.04	0.04	0.06	0.08	0.10	0.11	0.13	-
1500-2200 CFM 16x24x1+18x24x1 (406x610x25+457x610x25)	5.0	-	-	-	-	-	-	0.02	0.03	0.03	0.04	0.04	0.06	0.08	0.10	0.11	0.13	0.14

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Typical Piping and Wiring



Application Data

Condensate trap — A 2-in. (50.8 mm) condensate trap must be field supplied.

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 downflow openings. Removal of the inserts is similar to removing an electrical knock-out.

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.

Minimum ambient cooling operation temperature — All standard units have a minimum ambient operating temperature of 40°F (4°C). With accessory low ambient temperature kit, units can operate at temperatures down to 0°F (-17°C).

Electrical Data

MODEL	NOMINAL V-PH-HZ	VOLTAGE RANGE		COMPRESSOR		OFM	IFM	NOMINAL ELECTRIC HEAT	POWER SUPPLY		
		MIN	MAX	RLA	LRA	FLA	FLA	kW	FLA	MCA	MOCP
24	208/230-1-60	197	253	10.3	62	0.56	3.9	-/-	-/-	17.4	25
								3.8/5	18.1/20.8	40/43.3	40/45
								5.4/7.2	25.9/30	49.7/54.8	50/60
								7.5/10	36.1/41.7	62.5/69.5	70/70
36	208/230-1-60	197	253	14.6	90	1.05	5.8	-/-	-/-	25.2	35
								3.8/5	18.1/20.8	47.7/51.1	50/60
								5.4/7.2	25.9/30	57.5/62.6	60/70
								7.5/10	36.1/41.7	70.2/77.2	80/80
								11.3/15	54.2/62.5	92.9/103.2	100/110
	208/230-3-60	197	253	9.9	82	1.05	5.8	-/-	-/-	19.3	25
								3.8/5	10.4/12	32.2/34.2	35/35
								5.4/7.2	20.8/24.1	45.2/49.4	50/50
								11.3/15	31.2/36.1	58.2/64.4	60/70
36	460-3-60	414	506	4.8	44.3	0.53	1.7	-	-	8.2	15
								10	12	23.2	25
								15	18	30.7	35
48	208/230-1-60	197	253	23	138	1.05	6.9	-/-	-/-	36.8	60
								3.8/5	18.1/20.8	59.3/62.7	60/70
								5.4/7.2	25.9/30	69.1/74.2	70/80
								7.5/10	36.1/41.7	81.8/88.8	90/90
								11.3/15	54.2/62.5	104.5/114.8	110/125
								15/20	72.2/83.3	127/140.8	150/150
	208/230-3-60	197	253	11.9	112	1.05	6.9	-/-	-/-	22.9	30
								3.8/5	10.4/12	35.8/37.8	40/40
								5.4/7.2	20.8/24.1	48.8/53	50/60
								11.3/15	31.2/36.1	61.8/68	70/70
								15/20	41.4/47.9	74.6/82.7	80/90
48	460-3-60	414	506	6.8	61.8	0.53	2.3	-	-	11.3	15
								10	12	26.3	30
								15	18	33.3	35
								20	24.1	41.5	45
60	208/230-1-60	197	253	29.4	149	1.05	6.9	-/-	-/-	44.8	60
								3.8/5	18.1/20.8	67.3/70.7	70/80
								5.4/7.2	25.9/30	77.1/82.2	80/90
								7.5/10	36.1/41.7	89.8/96.8	90/100
								11.3/15	54.2/62.5	112.5/122.8	125/125
								15/20	72.2/83.3	135/148.8	150/150
	208/230-3-60	197	253	14	150	1.05	6.9	-/-	-/-	25.5	35
								3.8/5	10.4/12	38.5/40.5	40/45
								5.4/7.2	20.8/24.1	51.5/55.6	60/60
								11.3/15	31.2/36.1	64.5/70.6	70/80
								15/20	41.4/47.9	77.2/85.3	80/90
60	460-3-60	414	506	6.3	58	0.53	2.3	-	-	10.7	15
								10	12	25.7	30
								15	18	33.2	35
								20	24.1	40.8	45

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

LEGEND

FLA - Full Load Amps
IDM - Inducer Motor
IFM - Indoor Fan Motor
LRA -Locked Rotor Amps
MCA - Minimum Circuit Amps
MOCP - Maximum Over Current Protection
OFM - Outdoor Fan Motor
RLA - Rated Load Amps

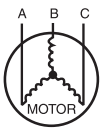
NOTES:

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 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

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

$$= 0.8\%$$

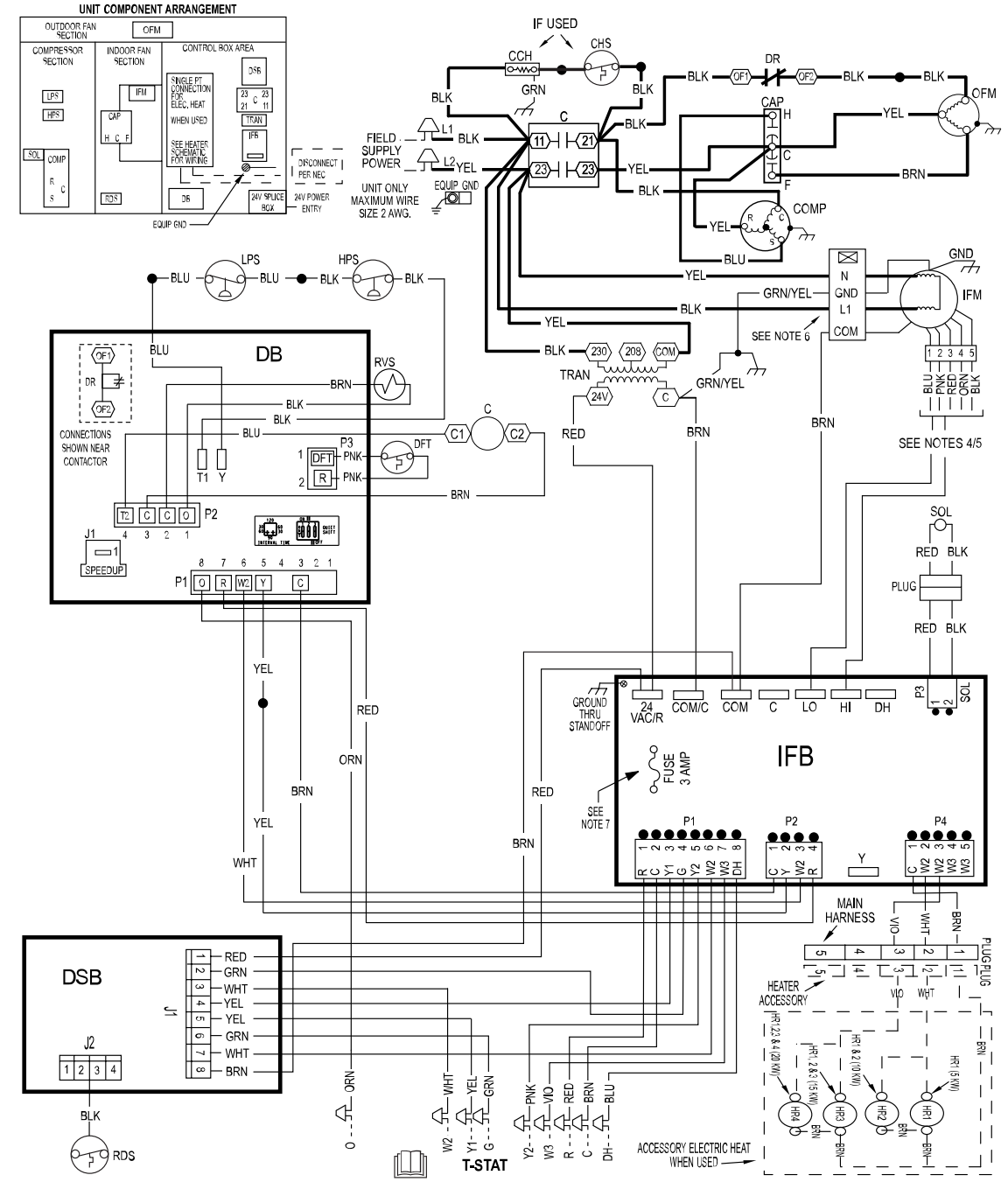
This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

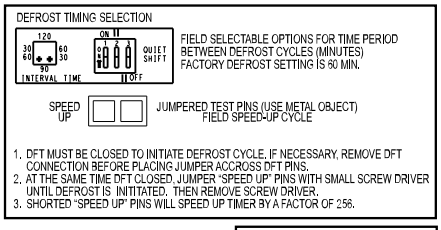
IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

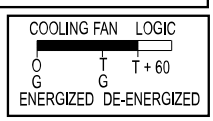
A06564

Connection Wiring Diagram 208/230-1-60

CONNECTION WIRING DIAGRAM
DANGER: ELECTRICAL SHOCK HAZARD DISCONNECT POWER BEFORE SERVICING







NOTES:

1. IF ANY OF THE ORIGINAL WIRES FURNISHED ARE REPLACED IT MUST BE REPLACED WITH THE SAME OR ITS EQUIVALENT.
2. SEE PRE SALE LITERATURE FOR THERMOSTATS.
3. USE 75 DEGREES C COPPER CONDUCTORS FOR FIELD INSTALLATION.
4. REFER TO INSTALLATION INSTRUCTIONS FOR CORRECT SPEED SELECTION FOR IFM.
5. RELOCATION OF SPEED TAPS MAY BE REQUIRED WHEN USING FIELD INSTALLED ELECTRIC HEATERS. CONSULT INSTALLATION INSTRUCTIONS TO DETERMINE CORRECT SPEED TAP SETTING.
6. "DO NOT DISCONNECT PLUG UNDER LOAD".
7. THIS FUSE IS MANUFACTURED BY LITTLE FUSE, P/N 287003.
8. N.E.C. CLASS 2, 24V.
9. CCH NOT USED ON ALL UNITS.

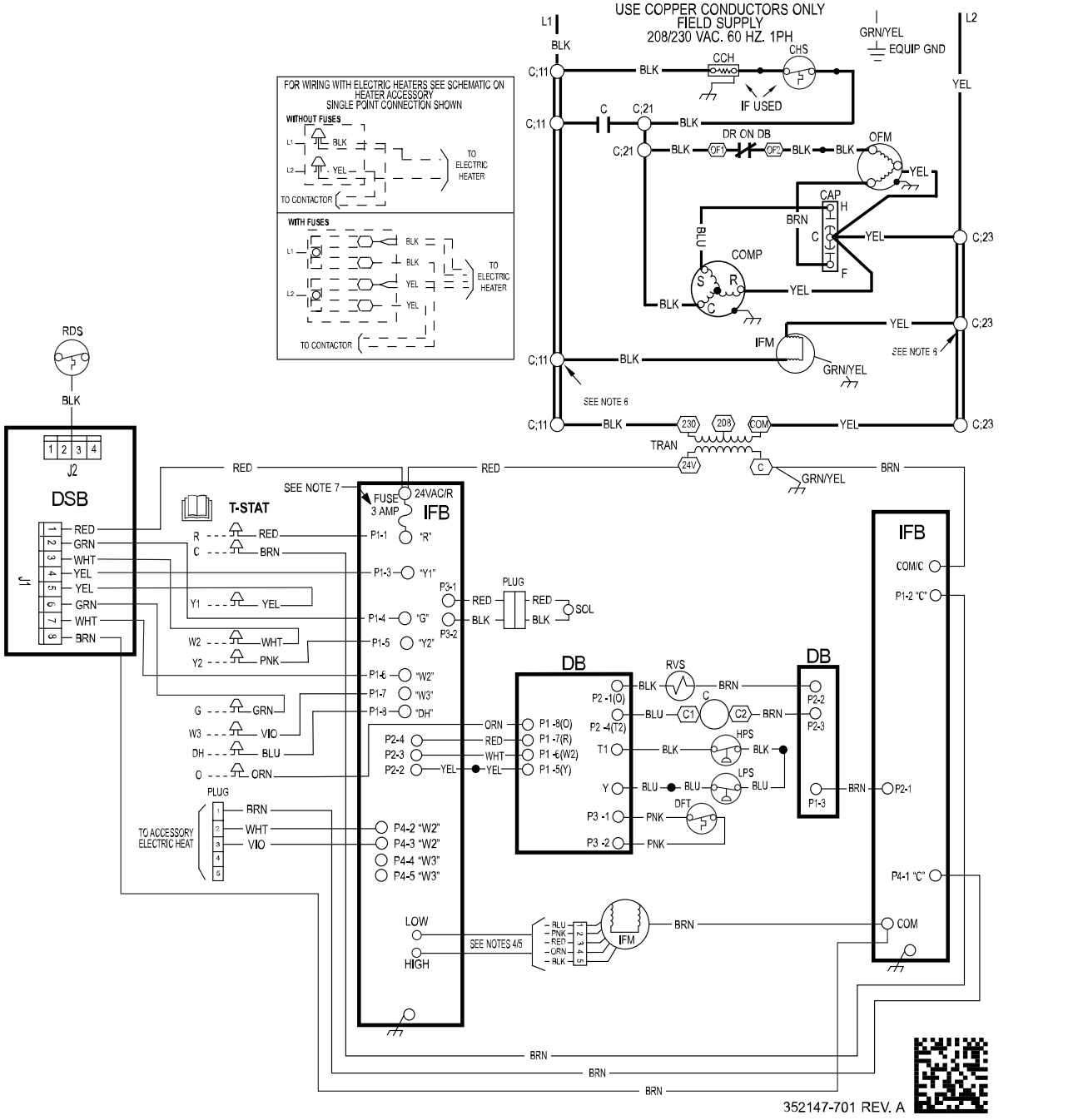
A250103

Ladder Wiring Diagram 208/230-1-60

LADDER WIRING DIAGRAM
DANGER: ELECTRICAL SHOCK HAZARD DISCONNECT POWER BEFORE SERVICING

LEGEND

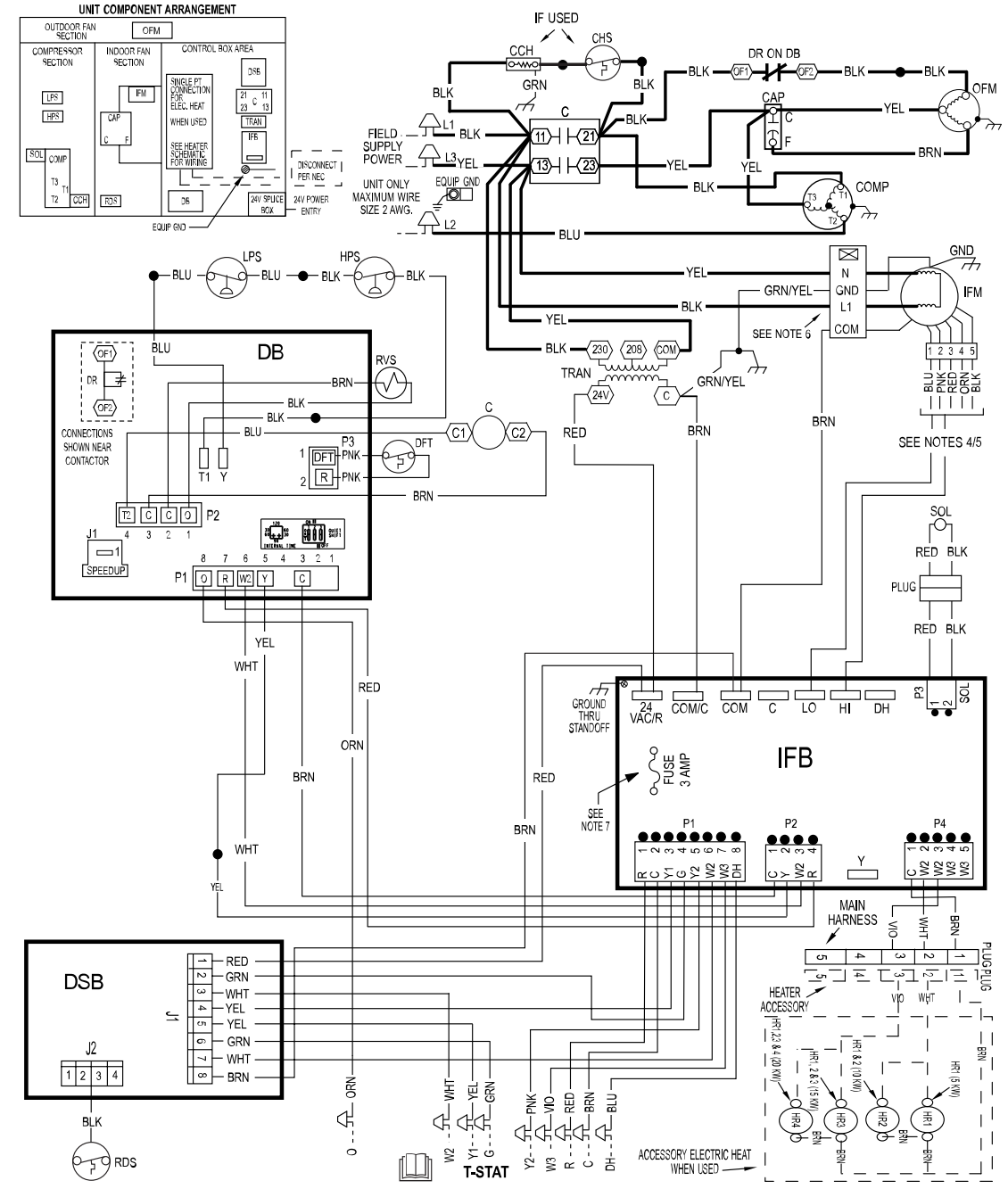
DB	DEFROST BOARD	**DSB**	DISSIPATION BOARD	**IFB**	INDOOR FAN BOARD	**RDS**	REFRIG. DETECTION SENSOR
DH	DEHUM	**GND**	GROUND	**IFM**	INDOOR FAN MOTOR	**RVS**	REVERSING VALVE
DFT	DEFROST TEMPERATURE SWITCH	**HPS**	HIGH PRESSURE SWITCH	**LPS**	LOW PRESSURE SWITCH	**SOL**	COMPRESSOR SOLENOID
DR	DEFROST RELAY (SEE DB)	**HR**	HEATER RELAY	**OFM**	OUTDOOR FAN MOTOR	**TRAN**	TRANSFORMER
△	FIELD SPLICE	⬭	SPLICE (MARKED)	- - -	ACCESSORY OR OPTIONAL WIRING	**T-STAT**	THERMOSTAT
⊃	TERMINAL (MARKED)	——	FACTORY LOW VOLTAGE	———	FACTORY HI VOLTAGE	**CCH**	CRANKCASE HEATER
○	TERMINAL (UNMARKED)	– –	FIELD CONTROL WIRING	**C**	CONTACTOR	**CHS**	CRANKCASE HEATER SWITCH
●	SPLICE	—–	FIELD POWER WIRING	**CAP**	CAPACITOR	**COMP**	COMPRESSOR MOTOR
						CTD	COMPRESSOR TIME DELAY

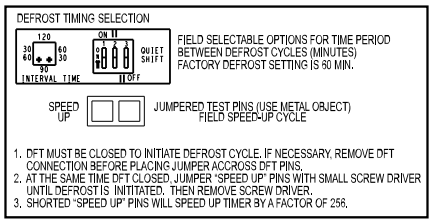


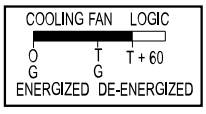
A250104

Connection Wiring Diagram 208/230-3-60

CONNECTION WIRING DIAGRAM
DANGER: ELECTRICAL SHOCK HAZARD DISCONNECT POWER BEFORE SERVICING







NOTES:

1. IF ANY OF THE ORIGINAL WIRES FURNISHED ARE REPLACED IT MUST BE REPLACED WITH THE SAME OR ITS EQUIVALENT.
2. SEE PRE SALE LITERATURE FOR THERMOSTATS.
3. USE 75 DEGREES C COPPER CONDUCTORS FOR FIELD INSTALLATION.
4. REFER TO INSTALLATION INSTRUCTIONS FOR CORRECT SPEED SELECTION FOR IFM.
5. RELOCATION OF SPEED TAPS MAY BE REQUIRED WHEN USING FIELD INSTALLED ELECTRIC HEATERS. CONSULT INSTALLATION INSTRUCTIONS TO DETERMINE CORRECT SPEED TAP SETTING.
6. "DO NOT DISCONNECT PLUG UNDER LOAD".
7. THIS FUSE IS MANUFACTURED BY LITTLE FUSE, P/N 287003.
8. N.E.C. CLASS 2, 24V.
9. CCH NOT USED ON ALL UNITS.

A250105

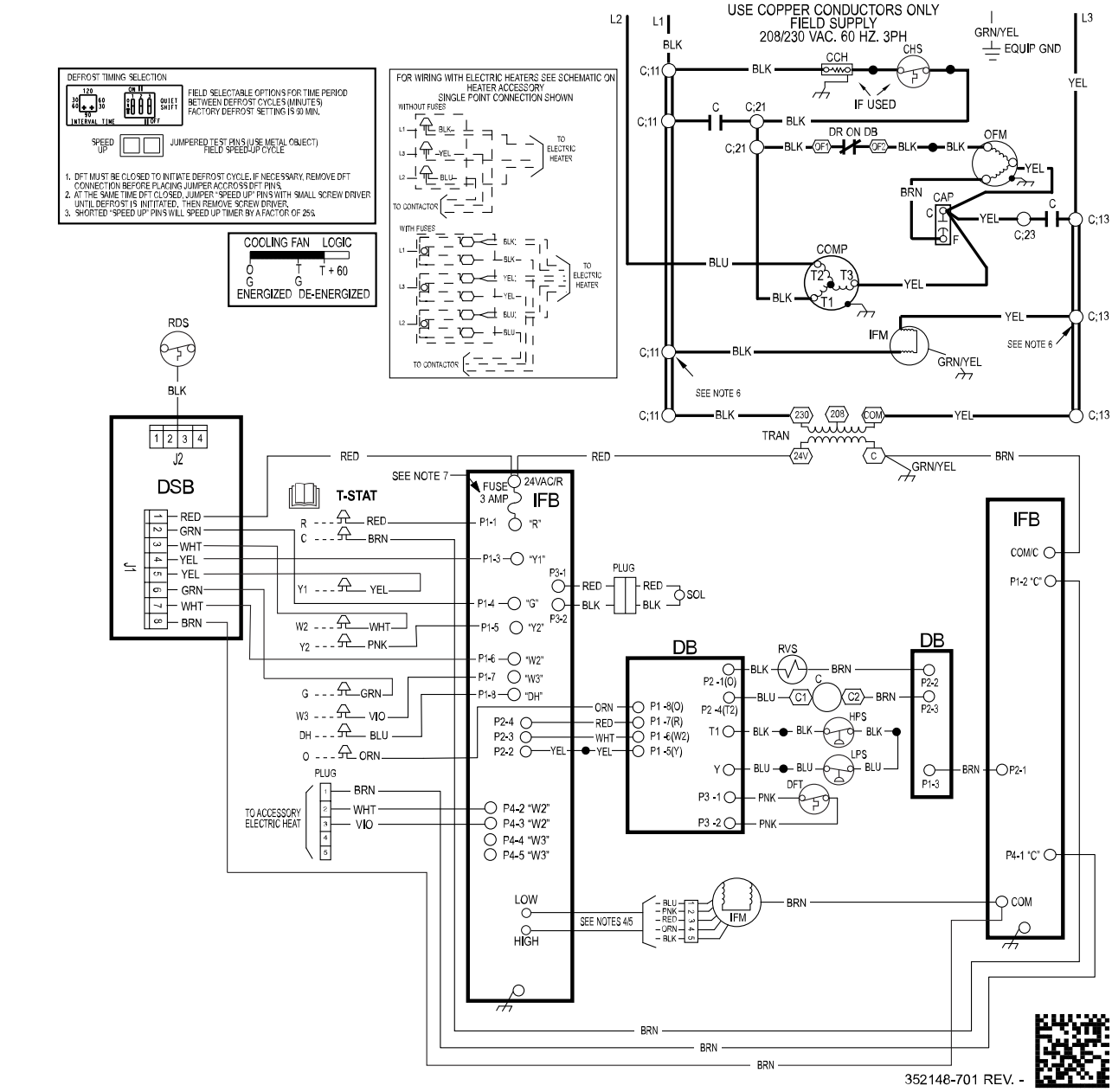
Ladder Wiring Diagram 208/230-3-60

LADDER WIRING DIAGRAM

DANGER: ELECTRICAL SHOCK HAZARD DISCONNECT POWER BEFORE SERVICING

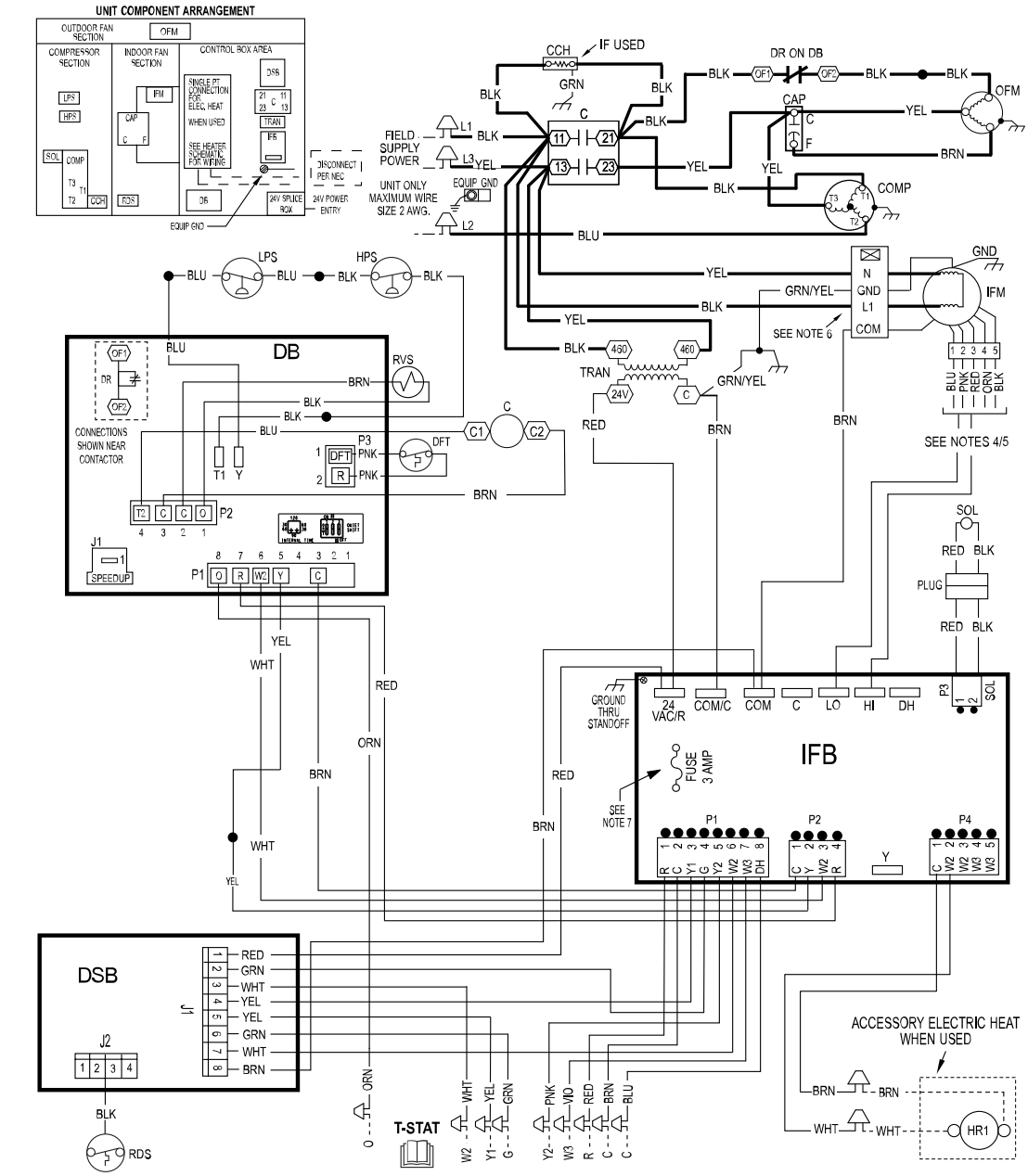
LEGEND

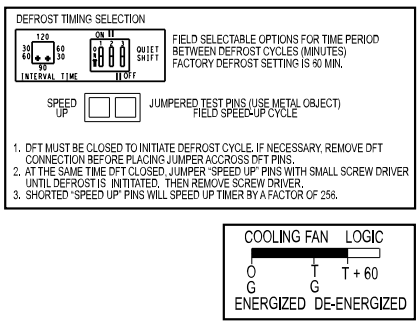
DB	DEFROST BOARD	**DSB**	DISSIPATION BOARD	**IFB**	INDOOR FAN BOARD	**RDS**	REFRIG. DETECTION SENSOR
DH	DEHUM	**GND**	GROUND	**IFM**	INDOOR FAN MOTOR	**RVS**	REVERSING VALVE
DFT	DEFROST TEMPERATURE SWITCH	**HPS**	HIGH PRESSURE SWITCH	**LPS**	LOW PRESSURE SWITCH	**SOL**	COMPRESSOR SOLENOID
DR	DEFROST RELAY (SEE DB)	**HR**	HEATER RELAY	**OFM**	OUTDOOR FAN MOTOR	**TRAN**	TRANSFORMER
						T-STAT	THERMOSTAT
△	FIELD SPLICE	⬭	SPLICE (MARKED)	- - -	ACCESSORY OR OPTIONAL WIRING	**CCH**	CRANKCASE HEATER
⬭	TERMINAL (MARKED)	——	FACTORY LOW VOLTAGE	——	FACTORY HI VOLTAGE	**CHS**	CRANKCASE HEATER SWITCH
○	TERMINAL (UNMARKED)	– –	FIELD CONTROL WIRING	**C**	CONTACTOR	**COMP**	COMPRESSOR MOTOR
●	SPLICE	—–	FIELD POWER WIRING	**CAP**	CAPACITOR	**CTD**	COMPRESSOR TIME DELAY



Connection Wiring Diagram 460-3-60

CONNECTION WIRING DIAGRAM
DANGER: ELECTRICAL SHOCK HAZARD DISCONNECT POWER BEFORE SERVICING





NOTES:

1. IF ANY OF THE ORIGINAL WIRES FURNISHED ARE REPLACED IT MUST BE REPLACED WITH THE SAME OR ITS EQUIVALENT.
2. SEE PRE SALE LITERATURE FOR THERMOSTATS.
3. USE 75 DEGREES C COPPER CONDUCTORS FOR FIELD INSTALLATION.
4. REFER TO INSTALLATION INSTRUCTIONS FOR CORRECT SPEED SELECTION FOR IFM.
5. RELOCATION OF SPEED TAPS MAY BE REQUIRED WHEN USING FIELD INSTALLED ELECTRIC HEATERS. CONSULT INSTALLATION INSTRUCTIONS TO DETERMINE CORRECT SPEED TAP SETTING.
6. "DO NOT DISCONNECT PLUG UNDER LOAD".
7. THIS FUSE IS MANUFACTURED BY LITTLE FUSE, P/N 267003.
8. N.E.C. CLASS 2, 24V.
9. CCH NOT USED ON ALL UNITS.

A250110

Ladder Wiring Diagram 460-3-60

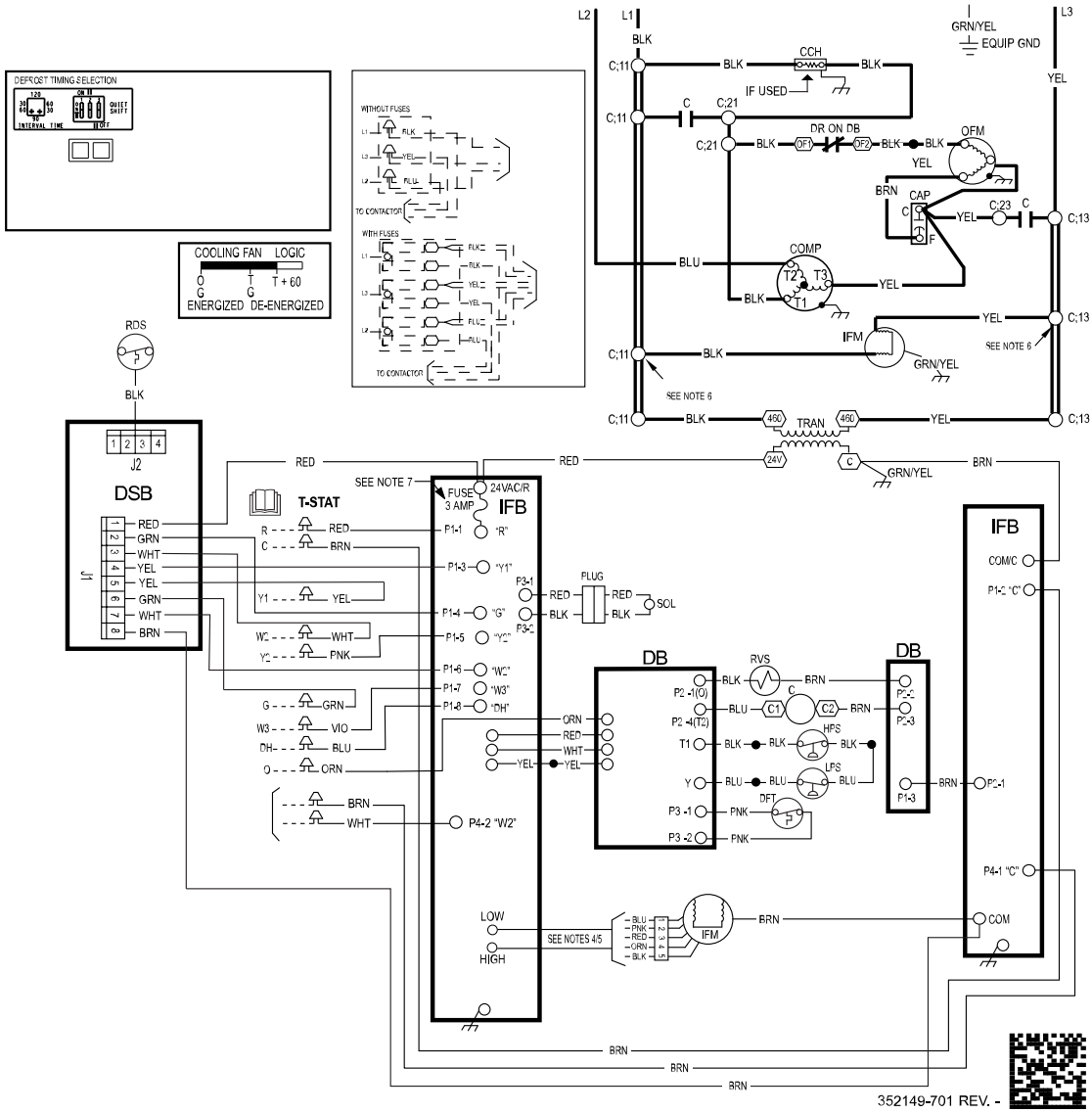
LADDER WIRING DIAGRAM

DANGER: ELECTRICAL SHOCK HAZARD DISCONNECT POWER BEFORE SERVICING

LEGEND

CRANKCASE HEATER	**DR** DEFROST RELAY (SEE DB)	**HR** HEATER RELAY	**OFM** OUTDOOR FAN MOTOR		
COMPRESSOR MOTOR	**DSB** DISSIPATION BOARD	**IFB** INDOOR FAN BOARD	**RDS** REFRIG. DETECTION SENSOR	**TRAN** TRANSFORMER
DEFROST BOARD	**GND** GROUND	**IFM** INDOOR FAN MOTOR	**RVS** REVERSING VALVE	**T-STAT** THERMOSTAT
DEFROST TEMPERATURE SWITCH	**HPS** HIGH PRESSURE SWITCH	**LPS** LOW PRESSURE SWITCH	**SOL** COMPRESSOR SOLENOID	

FIELD SPLICE	SPLICE (MARKED)	ACCESSORY OR OPTIONAL WIRING
TERMINAL (MARKED)	FACTORY LOW VOLTAGE	FACTORY HI VOLTAGE
TERMINAL (UNMARKED)	FIELD CONTROL WIRING	**C** CONTACTOR
SPLICE	FIELD POWER WIRING	**CAP** CAPACITOR



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Controls

Sequence of Operation

a. Continuous Fan
   (1.) Thermostat closes circuit R to G energizing the blower motor for continuous fan. The indoor fan is energized on low speed.

b. Cooling Mode
   (1.) Low Stage: Thermostat closes R to G, R to Y1, and R to O. The compressor and indoor fan are energized on low speed. The outdoor fan is also energized
   (2.) High Stage: Thermostat closes R to G, R to Y1, R to Y2, and R to O. The compressor and indoor fan are energized on high speed. The outdoor fan is also energized.

c. Electric Heating Mode
   (1.) Thermostat closes circuit R to W2 or W3, and R to G. There are no on or off delays.

d. Heat Pump Heating
   (1.) Low Stage: Thermostat closes R to G, R to Y1. The compressor and indoor fan are energized on low speed. The outdoor fan is also energized
   (2.) High Stage: Thermostat closes R to G, R to Y1, R to Y2. The compressor and indoor fan are energized on high speed. The outdoor fan is also energized.

e. Heat Pump Heating with Auxiliary Heat
   (1.) Thermostat closes circuits R to G, R to Y and R to W/W1 or W2. The compressor, indoor and outdoor fans are energized, as well as the electric heat relays.

f. Defrost Mode

The defrost mode is automatically energized by the defrost board during heating mode. The defrost board energizes “O” (reversing valve) and “W2” (electric heat). It also de-energizes the outdoor fan. When defrost is complete, unit will return to heating mode. If room thermostat is satisfied during defrost, unit will shut down and restart in defrost on next call for heat.

Guide Specifications

Packaged Air Conditioner System
Constant Volume Application
HVAC Guide Specifications

Size Range:**2 to 5 Tons, Nominal Cooling**

SYSTEM DESCRIPTION

Outdoor rooftop mounted or ground mounted, electric cooling unit utilizing a hermetic 2-stage scroll compressor for cooling duty. Unit shall discharge supply air vertically or horizontally as shown on contract drawings. Condenser fan/coil section shall have a draw-thru design with vertical discharge for minimum sound levels.

QUALITY ASSURANCE

- Unit shall be rated in accordance with AHRI Standards 210/240 and AHRI 270.
- Unit shall be designed and certified in accordance with UL 60335-2-40 and 60335-1.
- Unit shall be manufactured in a facility registered to ISO 9001 manufacturing quality standard.
- Roof curb shall be designed to conform to NRCA Standards.
- Insulation and adhesives shall meet NFPA 90A requirements for flame spread and smoke generation.
- 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

1. General:
   Factory-assembled, single-piece, heating and cooling unit. Contained within the enclosure shall be all factory wiring, piping, controls, refrigerant charge with R-454B refrigerant, and special features required prior to field start-up.
2. Unit Cabinet:
   a. Unit cabinet shall be constructed of phosphated, zinc-coated, pre-painted steel capable of with-standing 500 hours in salt spray.
   b. Normal service shall be through a single removable cabinet panel.
   c. The unit shall be constructed on a rust proof unit base that has an externally trapped, integrated sloped drain.
   d. Evaporator fan compartment top surface shall be insulated with a minimum 1/2-in. (12.7 mm) thick, flexible fiberglass insulation, coated on the air side and retained by adhesive and mechanical means. The evaporator 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.
   e. Unit shall have a field-supplied condensate trap.
3. Fans:
   a. The evaporator fan shall be a multi-speed ECM Blower Motor.
   b. Fan wheel shall be made from steel, be double-inlet type with forward curved blades with corrosion resistant finish. Fan wheel shall be dynamically balanced.
   c. Condenser fan shall be direct drive propeller type with aluminum blades riveted to corrosion resistant steel spiders, be dynamically balanced, and discharge air vertically.
4. Compressor:
   a. Fully hermetic compressors with factory-installed vibration isolation.
   b. 2-Stage scroll compressor shall be standard on all units.
5. Coils:
   Tin-plated copper tubes on indoor coil. Copper tubes on outdoor coil.
6. Refrigerant Components:
   Refrigerant expansion device shall be of the TXV (thermostatic expansion valve) for cooling and fixed orifice for heating.
7. Filters:
   Filter section shall consist of field-installed, throwaway, 1-in. (25 mm) thick fiberglass filters of commercially available sizes.
8. Controls and Safeties:
   a. Unit controls shall be complete with a self-contained low voltage control circuit.
   b. Compressors shall incorporate a solid-state compressor protector that provides reset capability.
9. Operating Characteristics:
   a. Unit shall be capable of starting and running at 125°F (51°C) ambient outdoor temperature per maximum load criteria of AHRI Standard 210/240.
   b. Compressor with standard controls shall be capable of operation down to 40°F (4°C) ambient outdoor temperature.
   c. Units shall be provided with fan time delay to prevent cold air delivery before the heat exchanger warms up.
   d. Unit shall be provided with 90-second fan time delay after the thermostat is satisfied.
10. Electrical Requirements:
    All unit power wiring shall enter the unit cabinet at a single location.
11. Motors:
    a. Compressor motors shall be of the refrigerant-cooled type with line-break thermal and current overload protection.
    b. All fan motors shall have permanently lubricated bearings, and inherent, automatic reset, thermal overload protection.
12. Special Options/Kits Available:
    a. Coil Options:
       Base unit with tin plated indoor coil hairpins.
    b. Compressor Start Kit (single phase units only):
       Shall provide additional starting torque for single-phase compressors.
    c. Crankcase Heater Kit:
       Shall provide anti-floodback protection for low-load cooling applications.
    d. Economizer for 2-stage operation:
       (Horizontal and Vertical with Jade Honeywell W7220 controller, Honeywell communicating actuator, and dry bulb sensor. (Contact MicroMetl Customer Service at 1-800-662-4822 to order.)

NOTE: The dehumidification feature on high stage cooling does not support use of an economizer.

(1.) Economizer controls capable of providing free cooling using outside air.
(2.) Equipped with low leakage dampers not to exceed 3% leakage, at 1.0 IN. W.C. pressure differential.
(3.) Spring return motor shuts off outdoor damper on power failure.

Guide Specifications (cont)

e. Electric Heaters:
   (1.) Electric heater shall be available as a field-installed option.
   (2.) Heater elements shall be open wire type, adequately supported and insulated with ceramic bushings.
   (3.) Electric heater packages must provide single point power connection capability.
f. Filter Rack Option or Kit:
   Shall provide filter mounting for downflow applications. Offered as an accessory.
g. Flat Roof Curb Kit:
   Curbs shall have seal strip and a wood nailer for flashing and shall be installed per manufacturer's instructions.
h. Low Ambient Package Kit:
   Shall consist of a solid-state control and condenser coil temperature sensor for controlling condenser-fan motor operation, which shall allow unit to operate down to 0°F (-17.7°C) outdoor ambient temperature when properly installed.
i. Manual Outdoor Air Damper Kit:
   Package shall consist of damper, birdscreen, and rainhood which can be preset to admit outdoor air for year-round ventilation.
j. Square-To-Round Duct Transitions Kit (24-48 size):
   Shall have the ability to convert the supply and return openings from rectangular to round.
k. Cabinet air leakage of 2.0% or less at .5 in. W.C. when tested in accordance with ASHRAE standard 193.

Training

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