Comfortmaker®
Air Conditioning & Heating

PHD4
Product Specifications

Up to 14.5 SEER, 12 EER, 8.0 HSPF, PACKAGE HEAT PUMP, 2 to 5 TONS
208/230–1–60 Single Phase
208/230–3–60 & 460–3–60 Three Phase



REFRIGERATION CIRCUIT
- Environmentally sound R–410A refrigerant
- Copper tube/aluminum fin condenser and evaporator coils
- Scroll compressor standard on all models
- Short–cycling protection for the compressor is built into the defrost control board
- Dehumidification mode (airflow reduction) on all models

EASY TO INSTALL AND SERVICE
- Installs easily on a rooftop or at ground level
- Easy three–panel accessibility for maintenance and installation
- Easily converts to down discharge applications
- Combination electric heating and cooling

BUILT TO LAST
- Direct drive high efficiency ECM blower motor on all models
- Pre–painted steel cabinet
- Vertical condenser fan discharge
- Full perimeter steel base rails
- High and low pressure switches provide added reliability for the compressor
- Single Phase models available with optional factory installed tin–coated copper evaporator coil with 3/8" spacing wire grilles standard as hail guard. All other models have 2" spacing wire grilles including 3 phase models.
  (These models are identified with letters TP in the 11th and 12th positions in the model number)

c UL us LISTED

LIMITED WARRANTY*
1 Phase PHD4 "E" Models
- 3 year No Hassle Replacement™ limited warranty for tin–coated 'TP' models
- 10 year parts limited warranty (including compressor and coils) with timely registration
- 5 year parts limited warranty if not registered within 90 days of original installation

3 Phase PHD4 "E" Models
- 5 year compressor limited warranty
- 1 year parts limited warranty

* See warranty certificate for details and restrictions

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 .

UNIT PERFORMANCE DATA

Model Number	COOLING Capacity BTU/h	SEER	EER	HEATING Capacity BTU/h	HSPF	Unit Dimensions Height x Width x Depth in (mm)	Operating Weight lbs (kg)
208/230–1–60							
PHD424000KTP0E	23,000	14.2	12.0	23,000	8.0	$44^{1}/_{8}$ x $48^{3}/_{16}$ x $32^{5}/_{8}$ (1121 x 1224 x 829)	348 (158)
PHD430000KTP0E	28,600	14.2	12.0	29,600	8.0	$44^{1}/_{8}$ x $48^{3}/_{16}$ x $32^{5}/_{8}$ (1121 x 1224 x 829)	340 (154)
PHD436000KTP0E	35,800	14.5	12.0	35,800	8.0	$44^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1137 x 1224 x 1122)	418 (190)
PHD442000KTP0E	40,500	14.5	12.0	41,500	8.0	$48^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1238 x 1224 x 1122)	464 (210)
PHD448000KTP0E	46,500	14.5	12.0	45,500	8.0	$48^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1238 x 1224 x 1122)	452 (205)
PHD460000KTP0E	57,000	14.5	12.0	59,000	8.0	$54^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1391 x 1224 x 1122)	506 (230)
208/230–1–60 and 208/230–3–60							
PHD424000K000E	23,000	14.2	12.0	23,000	8.0	$44^{1}/_{8}$ x $48^{3}/_{16}$ x $32^{5}/_{8}$ (1121 x 1224 x 829)	348 (158)
PHD430000‡000E	28,600	14.2	12.0	29,600	8.0	$44^{1}/_{8}$ x $48^{3}/_{16}$ x $32^{5}/_{8}$ (1121 x 1224 x 829)	340 (154)
PHD436000‡000E	35,800	14.5	12.0	35,800	8.0	$44^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1137 x 1224 x 1122)	418 (190)
PHD442000‡000E	40,500	14.5	12.0	41,500	8.0	$48^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1238 x 1224 x 1122)	464 (210)
PHD448000‡000E	46,500	14.5	12.0	45,500	8.0	$48^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1238 x 1224 x 1122)	452 (205)
PHD460000‡000E	57,000	14.5	12.0	59,000	8.0	$54^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1391 x 1224 x 1122)	506 (230)
460–3–60							
PHD436000L000E	35,800	14.5	12.0	35,800	8.0	$44^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1137 x 1224 x 1122)	432 (196)
PHD442000L000E	40,500	14.5	12.0	41,500	8.0	$48^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1238 x 1224 x 1122)	476 (216)
PHD448000L000E	46,500	14.5	12.0	45,500	8.0	$48^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1238 x 1224 x 1122)	466 (211)
PHD460000L000E	57,000	14.5	12.0	59,000	8.0	$54^{3}/_{4}$ x $48^{3}/_{16}$ x $44^{3}/_{16}$ (1391 x 1224 x 1122)	520 (236)

‡ – K = 208/230–1–60, H = 208/230–3–60

MODEL NOMENCLATURE

MODEL SERIES	1	2	3	4	5,6	7,8,9	10	11,12	13	14	15
	P	H	D	4	36	000	K	00	0	E	1

P = Package

H = Heat Pump

D = Standard

TIER

3 = 13

4 = 14

5 = 15

SEER

24 = 24,000 BTUH = 2 Tons

30 = 30,000 BTUH = 2.5 Tons

36 = 36,000 BTUH = 3 Tons

42 = 42,000 BTUH = 3.5 Tons

48 = 48,000 BTUH = 4 Tons

60 = 60,000 BTUH = 5 Tons

NOMINAL COOLING CAPACITY

000 = no factory heat

NOMINAL HEATING BTUH (input)

K = 208/230–1–60

H = 208/230–3–60

L = 460–3–60

VOLTAGE

00 = No options

TP = Tin Plated Evaporator Main Tubes

FACTORY INSTALLED OPTIONS

0 = Standard

FEATURE CODE

Sales Model Digit

Engineering Digit

AHRI* CAPACITIES

COOLING CAPACITIES AND EFFICIENCIES

UNIT	NOMINAL TONS	STANDARD CFM	COOLING CAPACITY	EER	SEER
24	2	800	23000	12.0	14.2
30	2.5	1000	28600	12.0	14.2
36	3	1200	35800	12.0	14.5
42	3.5	1400	40500	12.0	14.5
48	4	1600	46500	12.0	14.5
60	5	1750	57000	12.0	14.5

Heat Pump Heating capacities and efficiencies

UNIT	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
24	23000	3.5	11400	2.2	8.0
30	29600	3.5	15400	2.1	8.0
36	35800	3.5	19800	2.4	8.0
42	41500	3.4	23000	2.3	8.0
48	45500	3.4	26000	2.4	8.0
60	59000	3.5	32000	2.4	8.0

LEGEND
dB–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, 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 (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.

PHYSICAL DATA

UNIT SIZE	24	30	36	42	48	60
NOMINAL CAPACITY (ton)	2	2.5	3	3.5	4	5
SHIPPING WEIGHT‡ (lb)	354	346	426	472	460	515
(kg)	161	157	193	214	209	234
COMPRESSOR QUANTITY	1					
TYPE	SCROLL COMPRESSOR					
REFRIGERANT	R-410A					
REFRIGERANT QUANTITY (lb)	11.1	10.3	9.9	11.3	12.5	15.2
QUANTITY (kg)	5.0	4.7	4.5	5.1	5.7	6.9
METERING DEVICE ID	TXV					
ORIFICE OD (in.)	0.032 (2)	0.037 (2)	0.038 (2)	0.040 (2)	0.040 (2)	0.049 (2)
(mm)	0.81 (2)	0.94 (2)	0.97 (2)	1.02 (2)	1.02 (2)	1.24 (2)
OUTDOOR COIL						
ROWS..FINS/in.	2..21	2..21	2..21	2..21	2..21	2..21
FACE AREA (sq. ft)	13.6	13.6	13.6	17.5	17.5	23.3
OUTDOOR FAN						
NOMINAL AIRFLOW	2500	2700	3100	3100	3100	3800
DIAMETER (in.)	24	24	26	26	26	26
DIAMETER (mm)	610	610	660	660	660	660
MOTOR HP (RPM)	1/10 (810)	1/5 (810)	1/5 (810)	1/5 (810)	1/5 (810)	1/4 (810)
INDOOR COIL						
ROWS..FINS/in.	3..17	3..17	3..17	3..17	3..17	3..17
FACE AREA (sq. ft)	3.7	3.7	4.7	4.7	5.6	5.6
INDOOR BLOWER						
NOMINAL COOLING AIRFLOW (cfm)	800	1000	1200	1400	1600	1750
SIZE (in.)	10x10	10x10	11x10	11x10	11x10	11x10
(mm)	254x254	254x254	279x254	279x254	279x254	279x254
MOTOR (HP)	1/2	1/2	3/4	3/4	1	1
HIGH-PRESSURE SWITCH (psig)						
CUTOUT	650 ± 15					
RESET (AUTO)	420 ± 25					
LOSS-OF-CHARGE/LOW-PRESSURE SWITCH						
LIQUID LINE (psig)						
CUTOUT	20 ± 5					
RESET (AUTO)	45 ± 10					
RETURN-AIR FILTERS*†						
THROWAWAY (in.)	20x20x1	20x24x1	24x30x1		24x36x1	
(mm)	508x508x25	508x610x25	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.

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

‡ For 460 volt units, add 14 lb (6.4 kg) to the weight.

A−WEIGHTED SOUND POWER LEVEL (dBA)

UNIT	Standard Rating (dBA)	TYPICAL OCTAVE BAND SPECTRUM (Dda) (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
24	74	63.5	64.5	69	69.5	65	59.5	50
30	75	63.5	66	71	69.5	66.5	61	54
36	74	64	66	68	68	66.5	60.5	52
42	73	63.5	63.5	66.5	67	64.5	60	52.5
48	74	68.5	65	67	67.5	65	60.5	53
60	75	68	64.5	68.5	69	65.5	62	58

NOTE: Tested in accordance with AHRI Standard 270−1995 (not listed in AHRI).

Electric Heaters

ORDERING NO.	NOMINAL CAPACITY (kW @ 240 or 480 VOLTS)	USED WITH SIZES					
		24	30	36	42	48	60
208/230 − SINGLE PHASE − 60 HZ							
CPHEATER052A0*	5.0	X	X	X			
CPHEATER064A0*	5.0	X	X	X	X	X	X
CPHEATER070A0*	7.2	X	X	X	X	X	X
CPHEATER050A0*	10.0	X	X	X	X	X	X
CPHEATER066A0*	15.0		X	X	X	X	X
CPHEATER054A0*	20.0				X	X	X
208/230 − THREE PHASE − 60 HZ							
CPHEATER055A0*	5.0		X	X	X	X	X
CPHEATER056A0*	10.0		X	X	X		
CPHEATER068A0*	10.0		X	X	X	X	X
CPHEATER058A0*	15.0		X	X	X	X	X
CPHEATER059A0*	20.0				X	X	X
460 − THREE PHASE − 60 HZ							
CPHEATER061A0*	10.0			X	X	X	X
CPHEATER062A0*	15.0			X	X	X	X
CPHEATER063A0*	20.0				X	X	X

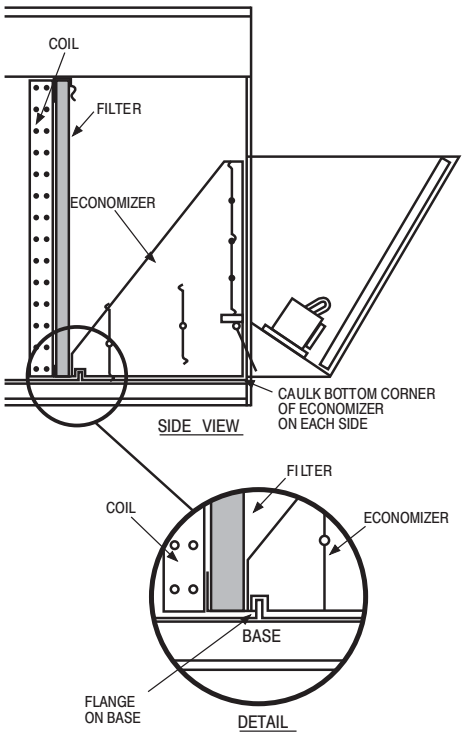
NOTE: Electric heaters are rated at 240v. Refer to Multiplication Factors table for other voltages.

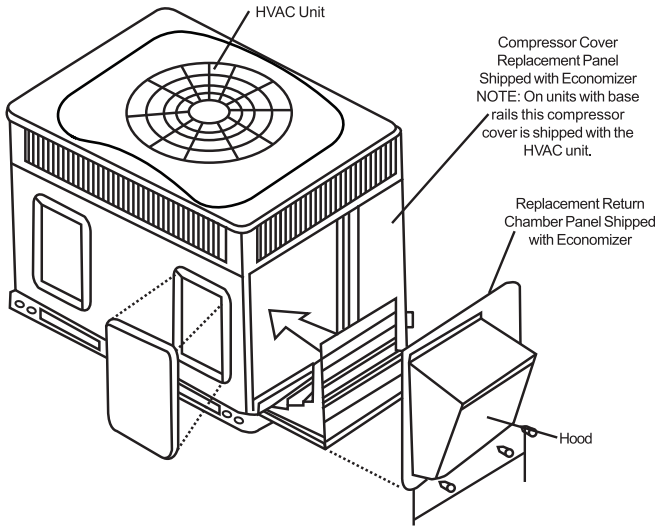
X = Approved combination

Minimum Airflow for Reliable Electric Heater Operation (CFM)

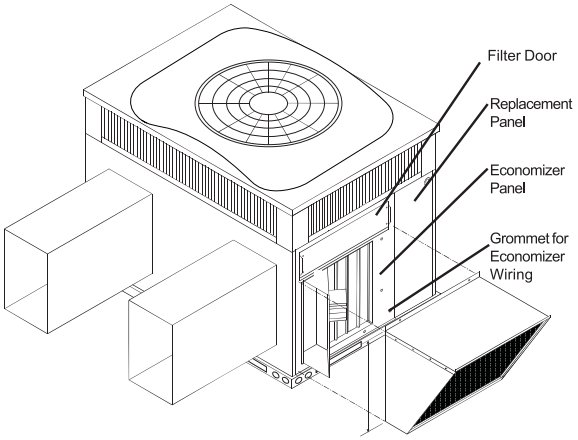
SIZE	24	30	36	42	48	60
AIRFLOW (CFM)	800	1025	1250	1400	1710	1800

ECONOMIZER



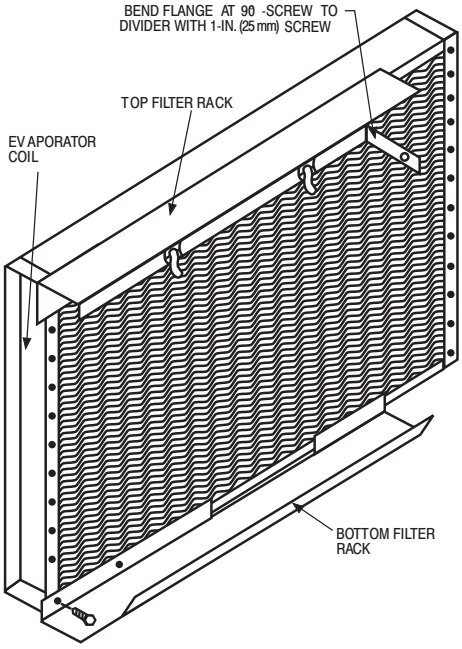


Vertical Economizer

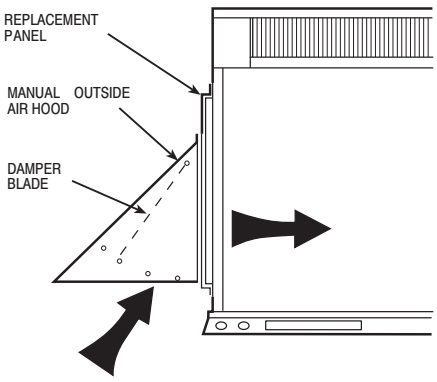


Horizontal Economizer

FILTER RACK



MANUAL OUTSIDE AIR DAMPER



A09375

Specifications subject to change without notice.

UNIT DIMENSIONS – 24-30

UNIT	SERIES	ELECTRICAL CHARACTERISTICS	UNIT WT.		UNIT HEIGHT IN/MM		CENTER OF GRAVITY IN/MM					
			LB	KG	"A"		X		Y		Z	
PHD424	1	208/230-1	348	158	44-1/8	1121	20-1/2	521	15-1/2	394	16-1/2	419
PHD430	1	208/230-1, 208/230-3-60	340	154	44-1/8	1121	20-1/2	521	15-1/2	394	16-1/2	419

UNITS	VOLTAGE	CORNER WEIGHT LB/KG							
		"1"		"2"		"3"		"4"	
PHD424	208/230	93	42	73	33	80	36	102	46
PHD430	208/230	90	41	71	32	79	36	100	45

NOTE: ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER

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.

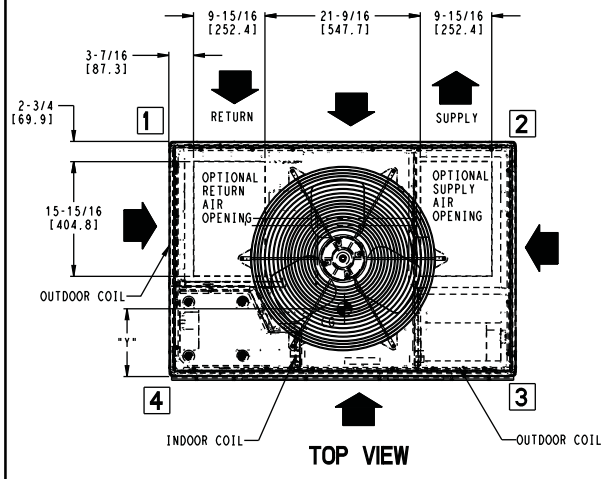
	INCHES [MM]
BETWEEN UNITS, POWER ENTRY SIDE	42 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	36 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	42 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

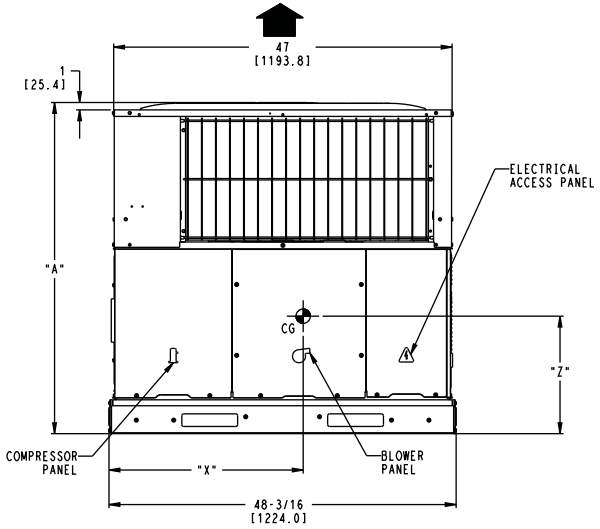
	INCHES [MM]
EVAP. COIL ACCESS SIDE	36 [914.0]
POWER ENTRY SIDE	42 [1066.8]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48 [1219.2]
SIDE OPPOSITE DUCTS	36 [914.0]
DUCT PANEL	12 [304.8]*

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

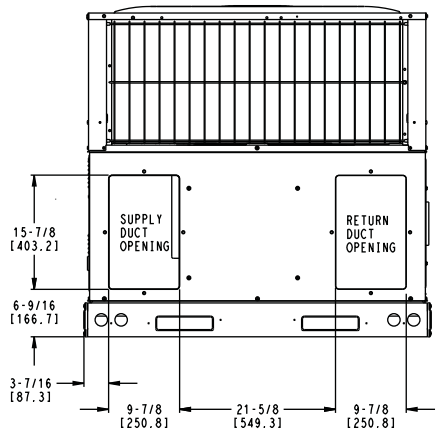
DIMENSIONS IN [] ARE IN MILLIMETERS



TOP VIEW



FRONT VIEW



REAR VIEW

A11491

UNIT DIMENSIONS – 36–60

UNIT	SERIES	ELECTRICAL CHARACTERISTICS	UNIT WT.		UNIT HEIGHT IN/MM		CENTER OF GRAVITY IN/MM					
			LB	KG	"A"		X		Y		Z	
PHD436	1	208/230-1, 208/230-3-60	418	190	44-3/4	1137	20-1/2	521	17-1/2	445	17-3/8	441
	1	460-3-60	432	196	44-3/4	1137	20-1/2	521	17-1/2	445	17-3/8	441
PHD442	1	208/230-1, 208/230-3-60	464	210	48-3/4	1238	20-1/2	521	17-1/2	445	17-3/8	448
	1	460-3-60	476	216	48-3/4	1238	20-1/2	521	17-1/2	445	17-3/8	448
PHD448	1	208/230-1, 208/230-3-60	452	205	48-3/4	1238	20-1/2	521	17-1/2	445	17-3/8	448
	1	460-3-60	466	211	48-3/4	1238	20-1/2	521	17-1/2	445	17-3/8	448
PHD460	1	208/230-1, 208/230-3-60	506	230	54-3/4	1391	20-1/2	521	17-1/2	445	18	457
	1	460-3-60	520	236	54-3/4	1391	20-1/2	521	17-1/2	445	18	457

UNIT	VOLTAGE	CORNER WEIGHTS LB/KG							
		"1"		"2"		"3"		"4"	
PHD436	208/230	92	42	73	33	111	50	142	64
	460	96	43	75	34	115	52	146	66
PHD442	208/230	103	47	81	37	124	56	157	71
	460	105	48	83	38	127	57	161	73
PHD448	208/230	100	45	79	36	120	55	153	69
	460	103	47	81	37	124	56	158	72
PHD460	208/230	112	51	88	40	135	61	171	78
	460	115	52	90	41	138	63	176	80

NOTE: ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER

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.

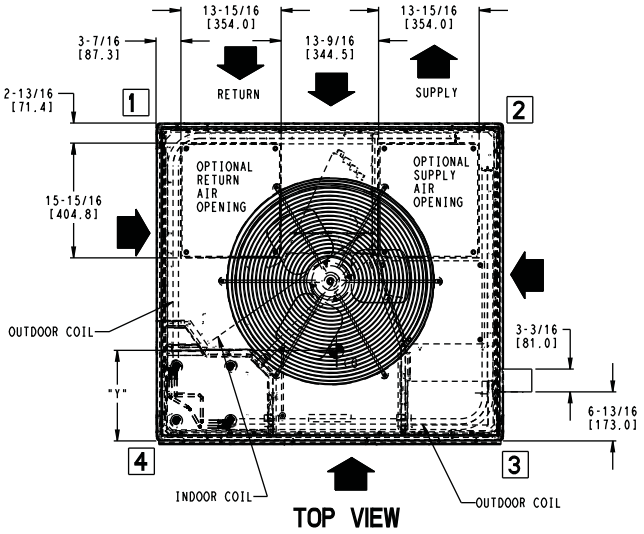
	INCHES [MM]
BETWEEN UNITS, POWER ENTRY SIDE	42 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE	36 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE	42 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING

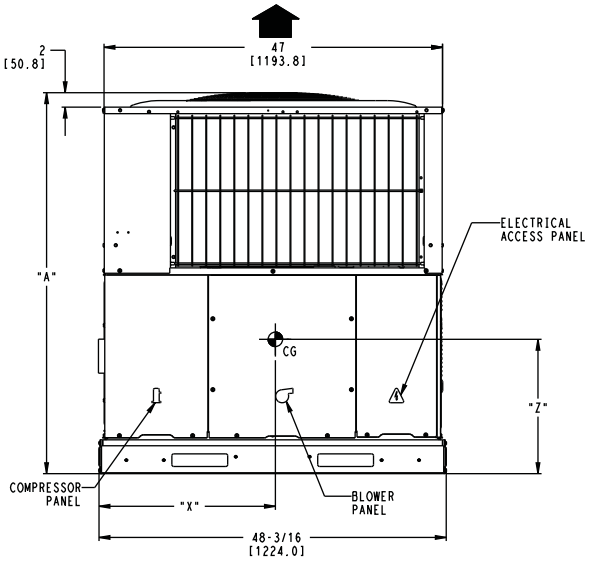
	INCHES [MM]
EVAP. COIL ACCESS SIDE	36 [914.0]
POWER ENTRY SIDE	42 [1066.8]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48 [1219.2]
SIDE OPPOSITE DUCTS	36 [914.0]
DUCT PANEL	12 [304.8]*

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

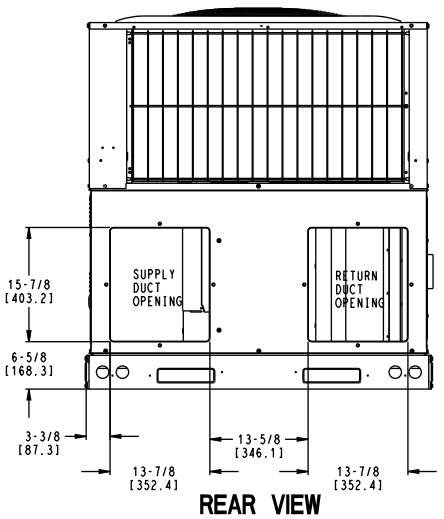
DIMENSIONS IN [] ARE IN MM



TOP VIEW

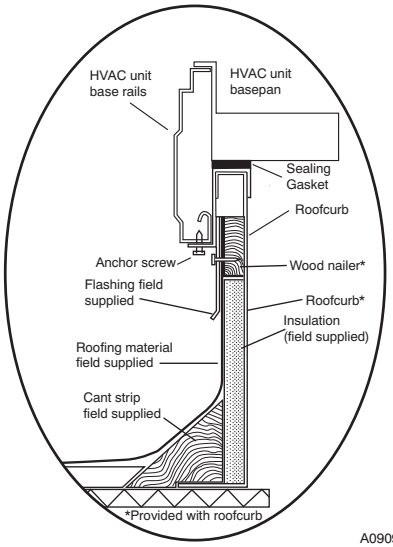


FRONT VIEW

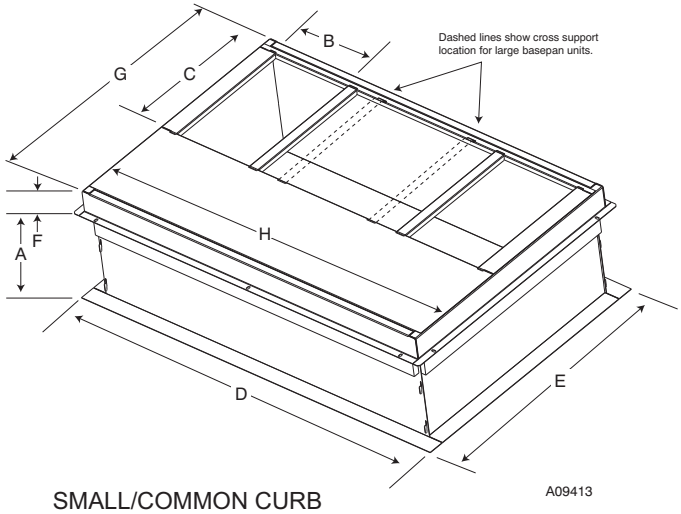


REAR VIEW

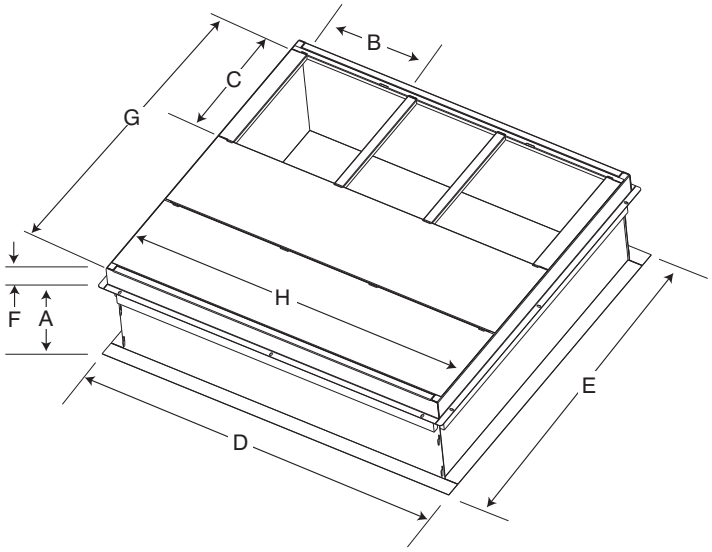
ROOF CURB ACCESSORY DIMENSIONS



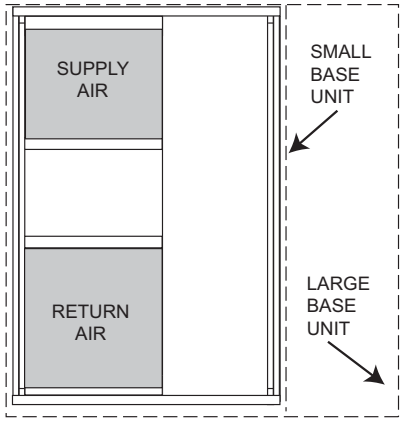
ROOF CURB DETAIL



SMALL/COMMON CURB



LARGE CURB



UNIT PLACEMENT ON COMMON CURB

SMALL OR LARGE BASE UNIT

A09414

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	CPRFCURB010A00	11 (279)	10 (254)	14 (356)	16 (406)	47.8 (1214)	32.4 (822)	2.7 (69)	30.6 (778)	46.1 (1170)
	CPRFCURB011A00	14 (356)								
Large	CPRFCURB012A00	11 (279)	14 (356)				43.9 (1116)		42.2 (1072)	
	CPRFCURB013A00	14 (356)								

* Part Numbers CPRCURB010A00 and CPRCURB011A00 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 mm) thick fiberglass 1 lb. density.

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 Temperature80°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 36 at 1200 CFM and 67°F (19°C) ewb (entering wet bulb) will provide a total capacity of 35,800 Btuh and a SHC of 26,950 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 36 size unit will deliver 34,800 BTUH at the AHRI high temp rating point. To achieve 60,000 BTUH, accessory electric heat will be required. Use the Balance Point Worksheet to plot the load line with the unit capacity. The difference between the load line and unit capacity at the design heating temperature is the amount of electric heat that will be required.

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	0.18 IN. W.C.
Total Static Pressure	0.51 IN. W.C.

Enter the table for Dry Coil Air Delivery— At 0.50 IN. W.C. ESP (external static pressure) and MED–LOW speed the motor delivers 1140 CFM. To achieve 1200 CFM, a higher speed tap is required.

5. Select unit that corresponds to power source available.

The Electrical Data Table shows that the unit is designed to operate at 208/230–1–60.

PERFORMANCE DATA

24 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F (deg C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	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	57 (13.9)	21.90	21.90	1.50	21.04	21.04	1.68	20.11	20.11	1.88	19.10	19.10	2.10	18.03	18.03	2.35	16.87	16.87	2.64
	62 (16.7)	22.70	20.36	1.50	21.63	19.79	1.68	20.49	19.17	1.88	19.30	18.47	2.10	18.08	18.08	2.35	16.90	16.90	2.64
	63 (17.2)	23.06	16.63	1.50	21.94	16.09	1.68	20.75	15.53	1.88	19.50	14.94	2.11	18.17	14.31	2.36	16.75	13.64	2.64
	67 (19.4)	24.96	17.37	1.50	23.75	16.83	1.69	22.46	16.26	1.89	21.12	15.67	2.12	19.68	15.04	2.37	18.16	14.37	2.65
	72 (22.2)	27.48	14.25	1.51	26.12	13.75	1.70	24.71	13.19	1.91	23.23	12.61	2.14	21.65	12.00	2.39	19.99	11.36	2.67
800	57 (13.9)	22.97	22.97	1.52	22.03	22.03	1.70	21.03	21.03	1.90	19.95	19.95	2.13	18.79	18.79	2.38	17.55	17.55	2.66
	62 (16.7)	23.39	21.91	1.52	22.27	21.26	1.70	21.10	21.08	1.90	19.98	19.98	2.13	18.82	18.82	2.38	17.58	17.58	2.66
	63 (17.2)	23.69	17.76	1.52	22.51	17.20	1.70	21.26	16.61	1.91	19.94	15.99	2.13	18.56	15.33	2.38	17.09	14.61	2.66
	67 (19.4)	25.63	18.59	1.52	24.34	18.02	1.71	23.00	17.43	1.92	21.58	16.80	2.14	20.09	16.14	2.39	18.51	15.43	2.67
	72 (22.2)	28.18	15.05	1.53	26.77	14.50	1.73	25.28	13.93	1.93	23.72	13.32	2.16	22.08	12.68	2.41	20.35	12.02	2.69
900	57 (13.9)	23.89	23.89	1.54	22.88	22.88	1.72	21.81	21.81	1.93	20.66	20.66	2.15	19.43	19.43	2.40	18.11	18.11	2.69
	62 (16.7)	24.03	23.26	1.54	22.92	22.92	1.72	21.85	21.85	1.93	20.69	20.69	2.15	19.46	19.46	2.40	18.14	18.14	2.69
	63 (17.2)	24.20	18.85	1.54	22.96	18.26	1.72	21.66	17.64	1.93	20.30	16.99	2.15	18.86	16.29	2.40	17.35	15.52	2.68
	67 (19.4)	26.16	19.77	1.54	24.82	19.18	1.73	23.42	18.55	1.94	21.95	17.89	2.16	20.41	17.19	2.41	18.78	16.43	2.69
	72 (22.2)	28.76	15.79	1.55	27.27	15.22	1.75	25.73	14.62	1.95	24.11	14.00	2.18	22.41	13.34	2.43	20.62	12.64	2.71

*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.

24 Heating Extended Performance Table –10–60 (–23.3–15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES deg F (deg 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	7.13	6.56	1.48	9.45	8.70	1.55	12.07	11.08	1.62	14.83	13.45	1.68	17.57	15.40	1.74	20.64	20.64	1.81	24.12	24.12	1.90	28.24	28.24	2.03
	800	7.23	6.65	1.49	9.58	8.81	1.55	12.45	11.43	1.62	14.96	13.57	1.67	17.75	15.55	1.72	20.87	20.87	1.78	24.44	24.44	1.86	28.65	28.65	1.98
	900	7.32	6.74	1.50	9.68	8.91	1.56	12.55	11.52	1.61	15.09	13.68	1.66	17.90	15.68	1.71	21.07	21.07	1.76	24.69	24.69	1.84	28.85	28.85	1.95
70 (21.1)	700	6.86	6.31	1.55	9.18	8.45	1.62	11.73	10.77	1.69	14.64	13.28	1.76	17.32	15.17	1.83	20.33	20.33	1.90	23.72	23.72	1.99	27.75	27.75	2.12
	800	6.97	6.41	1.55	9.31	8.57	1.62	11.89	10.92	1.68	14.77	13.40	1.75	17.50	15.33	1.80	20.57	20.57	1.87	24.04	24.04	1.95	28.17	28.17	2.07
	900	7.06	6.50	1.56	9.42	8.67	1.62	12.03	11.04	1.68	14.90	13.51	1.74	17.65	15.47	1.79	20.76	20.76	1.85	24.29	24.29	1.93	28.44	28.44	2.04
75 (23.9)	700	6.56	6.03	1.62	8.88	8.17	1.69	11.42	10.48	1.76	14.43	13.09	1.85	17.06	14.95	1.91	20.03	20.03	1.99	23.35	23.35	2.09	27.26	27.26	2.22
	800	6.67	6.13	1.62	9.02	8.30	1.69	11.57	10.62	1.75	14.57	13.22	1.83	17.24	15.11	1.89	20.26	20.26	1.96	23.65	23.65	2.04	27.67	27.67	2.17
	900	6.76	6.22	1.63	9.13	8.40	1.70	11.71	10.75	1.75	14.69	13.32	1.82	17.40	15.24	1.87	20.45	20.45	1.94	23.89	23.89	2.02	27.96	27.96	2.14

Specifications subject to change without notice.

PERFORMANCE DATA (CONT)

30 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F (deg C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	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	
875	57 (13.9)	27.14	27.14	1.89	26.11	26.11	2.10	25.02	25.02	2.33	23.84	23.84	2.59	22.53	22.53	2.89	21.09	21.09	3.23
	62 (16.7)	28.06	25.60	1.90	26.77	24.93	2.10	25.43	24.20	2.33	24.02	23.37	2.59	22.57	22.57	2.89	21.13	21.13	3.23
	63 (17.2)	28.55	20.86	1.90	27.21	20.23	2.10	25.81	19.58	2.33	24.31	18.88	2.59	22.68	18.13	2.89	20.91	17.30	3.23
	67 (19.4)	30.91	21.79	1.91	29.46	21.16	2.12	27.96	20.50	2.35	26.35	19.81	2.61	24.61	19.06	2.90	22.72	18.24	3.24
	72 (22.2)	34.14	17.72	1.93	32.54	17.12	2.14	30.88	16.51	2.37	29.10	15.87	2.63	27.19	15.17	2.92	25.11	14.39	3.25
1000	57 (13.9)	28.46	28.46	1.93	27.34	27.34	2.14	26.16	26.16	2.37	24.89	24.89	2.63	23.49	23.49	2.92	21.96	21.96	3.26
	62 (16.7)	28.88	27.57	1.93	27.56	26.80	2.14	26.22	26.22	2.37	24.94	24.94	2.63	23.53	23.53	2.92	21.99	21.99	3.26
	63 (17.2)	29.30	22.31	1.93	27.88	21.66	2.14	26.41	20.97	2.37	24.85	20.24	2.63	23.15	19.45	2.92	21.31	18.57	3.26
	67 (19.4)	31.70	23.35	1.95	30.18	22.69	2.15	28.60	22.00	2.38	26.91	21.27	2.64	25.10	20.49	2.93	23.14	19.62	3.27
	72 (22.2)	35.00	18.77	1.97	33.30	18.15	2.18	31.53	17.52	2.41	29.69	16.82	2.66	27.70	16.07	2.95	25.53	15.25	3.28
1125	57 (13.9)	29.59	29.59	1.97	28.40	28.40	2.17	27.13	27.13	2.40	25.78	25.78	2.66	24.30	24.30	2.96	22.67	22.67	3.30
	62 (16.7)	29.65	29.65	1.97	28.45	28.45	2.17	27.18	27.18	2.40	25.83	25.83	2.66	24.34	24.34	2.96	22.71	22.71	3.30
	63 (17.2)	29.89	23.70	1.97	28.41	23.02	2.17	26.89	22.31	2.40	25.26	21.54	2.66	23.52	20.70	2.95	21.64	19.77	3.29
	67 (19.4)	32.31	24.86	1.98	30.72	24.17	2.19	29.08	23.46	2.42	27.34	22.70	2.67	25.48	21.86	2.97	23.46	20.93	3.30
	72 (22.2)	35.63	19.78	2.01	33.88	19.11	2.21	32.06	18.43	2.44	30.14	17.70	2.70	28.08	16.92	2.99	25.85	16.08	3.31

*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.

30 Heating Extended Performance Table –10–60 (–23.3–15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES deg F (deg 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	9.56	8.79	1.94	12.51	11.51	2.01	16.03	14.71	2.09	19.18	17.39	2.16	22.61	19.81	2.23	26.50	26.50	2.32	31.02	31.02	2.44	36.42	36.42	2.60
	1000	9.74	8.96	1.96	12.71	11.70	2.02	16.27	14.93	2.09	19.37	17.57	2.15	22.86	20.03	2.22	26.81	26.81	2.30	31.42	31.42	2.41	36.91	36.91	2.56
	1125	9.89	9.10	1.98	12.89	11.86	2.04	16.43	15.08	2.10	19.55	17.73	2.15	23.07	20.21	2.21	27.06	27.06	2.29	31.72	31.72	2.39	37.19	37.19	2.54
70 (21.1)	875	9.13	8.40	2.02	12.12	11.15	2.10	15.35	14.09	2.17	18.92	17.16	2.26	22.31	19.55	2.34	26.15	26.15	2.43	30.55	30.55	2.55	35.85	35.85	2.71
	1000	9.31	8.57	2.04	12.32	11.34	2.11	15.60	14.31	2.17	19.13	17.35	2.25	22.56	19.77	2.32	26.45	26.45	2.40	30.95	30.95	2.51	36.34	36.34	2.67
	1125	9.47	8.72	2.06	12.50	11.51	2.12	15.85	14.55	2.18	19.31	17.51	2.25	22.77	19.95	2.31	26.70	26.70	2.39	31.25	31.25	2.50	36.67	36.67	2.66
75 (23.9)	875	8.67	7.98	2.11	11.69	10.76	2.19	14.93	13.70	2.27	18.68	16.94	2.37	22.01	19.29	2.45	25.79	25.79	2.54	30.10	30.10	2.67	35.28	35.28	2.83
	1000	8.85	8.14	2.12	11.90	10.95	2.20	15.16	13.92	2.27	18.88	17.12	2.36	22.25	19.50	2.43	26.09	26.09	2.51	30.49	30.49	2.63	35.76	35.76	2.78
	1125	9.01	8.29	2.15	12.08	11.12	2.21	15.36	14.10	2.28	19.05	17.27	2.36	22.46	19.68	2.42	26.33	26.33	2.50	30.79	30.79	2.61	36.10	36.10	2.77

Specifications subject to change without notice.

PERFORMANCE DATA (CONT)

36 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F (deg C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	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	57 (13.9)	33.80	33.80	2.35	32.51	32.51	2.62	31.13	31.13	2.92	29.64	29.64	3.26	28.00	28.00	3.65	26.21	26.21	4.10
	62 (16.7)	35.12	31.40	2.36	33.51	30.56	2.62	31.82	29.63	2.92	30.03	28.60	3.26	28.11	28.06	3.65	26.26	26.26	4.10
	63 (17.2)	35.63	25.64	2.36	33.98	24.84	2.63	32.23	24.00	2.93	30.35	23.10	3.26	28.32	22.12	3.65	26.12	21.07	4.10
	67 (19.4)	38.56	26.79	2.38	36.80	25.98	2.65	34.93	25.15	2.95	32.93	24.26	3.28	30.76	23.29	3.67	28.43	22.24	4.11
	72 (22.2)	42.38	22.02	2.40	40.45	21.27	2.68	38.42	20.46	2.98	36.23	19.60	3.31	33.88	18.68	3.70	31.34	17.68	4.14
1200	57 (13.9)	35.46	35.46	2.39	34.08	34.08	2.66	32.59	32.59	2.96	30.99	30.99	3.30	29.24	29.24	3.69	27.32	27.32	4.13
	62 (16.7)	36.21	33.75	2.39	34.54	32.85	2.66	32.81	31.79	2.96	31.05	31.05	3.30	29.29	29.29	3.69	27.37	27.37	4.13
	63 (17.2)	36.62	27.38	2.39	34.89	26.53	2.66	33.05	25.66	2.96	31.08	24.72	3.30	28.96	23.70	3.68	26.68	22.59	4.13
	67 (19.4)	39.61	28.66	2.41	37.76	27.82	2.69	35.80	26.95	2.98	33.70	26.01	3.32	31.44	25.00	3.71	29.01	23.90	4.15
	72 (22.2)	43.49	23.23	2.44	41.47	22.43	2.72	39.34	21.59	3.02	37.05	20.70	3.35	34.60	19.74	3.74	31.95	18.70	4.17
1350	57 (13.9)	36.89	36.89	2.43	35.42	35.42	2.70	33.84	33.84	3.00	32.14	32.14	3.34	30.28	30.28	3.72	28.26	28.26	4.17
	62 (16.7)	37.18	35.89	2.43	35.49	35.49	2.70	33.90	33.90	3.00	32.19	32.19	3.34	30.33	30.33	3.72	28.31	28.31	4.17
	63 (17.2)	37.42	29.04	2.43	35.62	28.17	2.70	33.71	27.26	2.99	31.67	26.28	3.33	29.48	25.20	3.72	27.14	24.02	4.16
	67 (19.4)	40.44	30.46	2.45	38.52	29.60	2.72	36.49	28.69	3.02	34.31	27.70	3.36	31.98	26.64	3.74	29.48	25.47	4.18
	72 (22.2)	44.37	24.36	2.48	42.29	23.54	2.75	40.06	22.67	3.05	37.69	21.74	3.39	35.15	20.74	3.77	32.42	19.67	4.21

*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.

36 Heating Extended Performance Table –10–60 (–23.3–15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES deg F (deg 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	12.06	11.10	2.28	15.34	14.11	2.37	19.31	17.73	2.48	22.99	20.85	2.57	27.20	23.83	2.67	32.01	32.01	2.79	37.62	37.62	2.96	44.15	44.15	3.17
	1200	12.24	11.26	2.28	15.55	14.31	2.37	19.49	17.89	2.46	23.21	21.05	2.54	27.49	24.09	2.63	32.36	32.36	2.75	38.06	38.06	2.92	43.75	43.75	3.10
	1350	12.40	11.41	2.29	15.73	14.47	2.37	19.66	18.05	2.46	23.40	21.22	2.53	27.72	24.29	2.62	32.62	32.62	2.73	38.08	38.08	2.88	42.98	42.98	3.07
70 (21.1)	1050	11.60	10.67	2.40	14.89	13.70	2.49	19.02	17.45	2.61	22.66	20.55	2.69	26.81	23.49	2.80	31.55	31.55	2.93	37.02	37.02	3.10	43.57	43.57	3.32
	1200	11.79	10.84	2.40	15.10	13.89	2.49	19.22	17.64	2.59	22.88	20.75	2.67	27.09	23.74	2.76	31.91	31.91	2.88	37.47	37.47	3.05	43.39	43.39	3.24
	1350	11.95	10.99	2.41	15.28	14.06	2.49	19.39	17.80	2.59	23.08	20.93	2.66	27.33	23.94	2.74	32.17	32.17	2.86	37.72	37.72	3.02	42.75	42.75	3.21
75 (23.9)	1050	11.10	10.21	2.52	14.41	13.26	2.62	18.18	16.69	2.72	22.35	20.27	2.83	26.42	23.15	2.94	31.08	31.08	3.07	36.44	36.44	3.24	42.87	42.87	3.48
	1200	11.29	10.38	2.53	14.62	13.46	2.62	18.52	17.00	2.71	22.56	20.46	2.81	26.70	23.40	2.90	31.43	31.43	3.02	36.87	36.87	3.18	42.98	42.98	3.39
	1350	11.45	10.53	2.54	14.81	13.62	2.62	18.95	17.40	2.71	22.75	20.64	2.79	26.93	23.60	2.88	31.71	31.71	2.99	37.19	37.19	3.17	42.46	42.46	3.36

Specifications subject to change without notice.

PERFORMANCE DATA (CONT)

42 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F (deg C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	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	
1225	57 (13.9)	38.52	38.52	2.64	36.98	36.98	2.93	35.30	35.30	3.27	33.49	33.49	3.66	31.53	31.53	4.11	29.35	29.35	4.64
	62 (16.7)	40.25	36.53	2.66	38.38	35.40	2.95	36.38	34.18	3.28	34.25	32.85	3.67	31.99	31.37	4.12	29.51	29.51	4.64
	63 (17.2)	40.42	29.59	2.66	38.51	28.53	2.95	36.47	27.40	3.28	34.29	26.19	3.67	31.96	24.88	4.12	29.43	23.45	4.64
	67 (19.4)	43.85	31.00	2.69	41.76	29.93	2.98	39.56	28.79	3.32	37.21	27.56	3.71	34.68	26.23	4.17	31.95	24.78	4.70
	72 (22.2)	47.65	25.61	2.73	45.34	24.58	3.02	42.92	23.50	3.37	40.32	22.34	3.77	37.55	21.10	4.23	34.58	19.76	4.76
1400	57 (13.9)	40.25	40.25	2.70	38.58	38.58	2.99	36.77	36.77	3.33	34.83	34.83	3.72	32.71	32.71	4.18	30.39	30.39	4.71
	62 (16.7)	41.40	39.06	2.71	39.43	37.83	3.00	37.36	36.48	3.33	35.17	34.96	3.73	32.82	32.82	4.18	30.43	30.43	4.71
	63 (17.2)	41.51	31.29	2.71	39.49	30.16	3.00	37.35	28.97	3.33	35.07	27.69	3.72	32.62	26.30	4.17	29.99	24.80	4.70
	67 (19.4)	45.01	32.87	2.74	42.81	31.72	3.04	40.50	30.50	3.37	38.03	29.20	3.77	35.38	27.79	4.23	32.54	26.26	4.76
	72 (22.2)	48.85	26.74	2.78	46.43	25.66	3.08	43.87	24.51	3.42	41.16	23.30	3.83	38.26	21.99	4.29	35.16	20.59	4.82
1575	57 (13.9)	41.72	41.72	2.75	39.93	39.93	3.05	38.01	38.01	3.39	35.94	35.94	3.78	33.69	33.69	4.24	31.24	31.24	4.77
	62 (16.7)	42.39	41.37	2.76	40.36	39.99	3.05	38.18	38.18	3.39	36.02	36.02	3.78	33.74	33.74	4.24	31.28	31.28	4.77
	63 (17.2)	42.38	32.88	2.76	40.28	31.70	3.05	38.04	30.44	3.38	35.68	29.10	3.77	33.14	27.65	4.23	30.42	26.06	4.75
	67 (19.4)	45.94	34.61	2.79	43.65	33.40	3.09	41.24	32.12	3.43	38.67	30.74	3.83	35.92	29.27	4.28	32.99	27.66	4.81
	72 (22.2)	49.80	27.78	2.84	47.28	26.65	3.14	44.62	25.45	3.48	41.80	24.18	3.88	38.81	22.81	4.35	35.62	21.35	4.88

*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.

42 Heating Extended Performance Table –10–60 (–23.3–15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES deg F (deg 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	13.77	12.67	2.42	17.68	16.26	2.58	21.89	20.09	2.72	25.94	23.53	2.83	30.55	26.77	2.94	35.85	35.85	3.08	42.16	42.16	3.29	48.46	48.46	3.55
	1400	13.95	12.83	2.44	17.89	16.46	2.59	22.07	20.26	2.72	26.18	23.74	2.82	30.86	27.04	2.92	36.22	36.22	3.06	42.20	42.20	3.24	47.82	47.82	3.50
	1575	14.11	12.98	2.46	18.12	16.68	2.61	22.25	20.42	2.73	26.38	23.93	2.82	31.11	27.26	2.92	36.53	36.53	3.07	41.84	41.84	3.24	47.22	47.22	3.49
70 (21.1)	1225	13.46	12.38	2.56	17.32	15.93	2.72	21.69	19.91	2.86	25.65	23.26	2.96	30.15	26.42	3.08	35.34	35.34	3.22	41.53	41.53	3.44	48.06	48.06	3.71
	1400	13.65	12.56	2.57	17.54	16.14	2.72	21.88	20.08	2.86	25.89	23.48	2.95	30.46	26.69	3.06	35.70	35.70	3.19	41.84	41.84	3.39	47.53	47.53	3.67
	1575	13.82	12.72	2.59	17.73	16.32	2.74	22.04	20.23	2.86	26.11	23.68	2.95	30.72	26.91	3.05	36.01	36.01	3.20	41.57	41.57	3.39	46.99	46.99	3.65
75 (23.9)	1225	13.07	12.03	2.69	16.92	15.57	2.85	21.46	19.70	3.00	25.36	23.00	3.11	29.77	26.09	3.22	34.82	34.82	3.37	40.89	40.89	3.60	47.64	47.64	3.89
	1400	13.27	12.21	2.71	17.15	15.78	2.86	21.67	19.89	3.00	25.60	23.21	3.09	30.06	26.34	3.20	35.19	35.19	3.34	41.34	41.34	3.56	47.18	47.18	3.84
	1575	13.45	12.38	2.73	17.36	15.97	2.88	21.83	20.04	3.01	25.80	23.40	3.09	30.32	26.56	3.19	35.47	35.47	3.34	41.27	41.27	3.54	46.71	46.71	3.83

Specifications subject to change without notice.

PERFORMANCE DATA (CONT)

48 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F (deg C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	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	57 (13.9)	44.75	44.75	3.06	42.98	42.98	3.39	41.06	41.06	3.77	39.00	39.00	4.20	36.79	36.79	4.67	34.42	34.42	5.18
	62 (16.7)	46.12	41.54	3.07	43.97	40.35	3.40	41.69	39.04	3.78	39.29	37.55	4.20	36.86	36.86	4.67	34.48	34.48	5.18
	63 (17.2)	46.70	33.68	3.07	44.47	32.60	3.41	42.08	31.45	3.78	39.54	30.23	4.20	36.87	28.94	4.67	34.05	27.58	5.18
	67 (19.4)	50.55	35.24	3.10	48.13	34.15	3.43	45.54	32.98	3.81	42.81	31.75	4.23	39.93	30.45	4.70	36.89	29.07	5.21
	72 (22.2)	55.52	28.74	3.13	52.82	27.67	3.47	49.97	26.55	3.84	46.97	25.36	4.26	43.81	24.12	4.73	40.47	22.80	5.24
1600	57 (13.9)	46.77	46.77	3.13	44.87	44.87	3.47	42.79	42.79	3.85	40.57	40.57	4.27	38.20	38.20	4.74	35.66	35.66	5.25
	62 (16.7)	47.44	44.50	3.14	45.22	43.17	3.47	42.89	42.89	3.85	40.63	40.63	4.27	38.26	38.26	4.74	35.71	35.71	5.25
	63 (17.2)	47.85	35.90	3.14	45.50	34.77	3.47	42.99	33.55	3.85	40.33	32.27	4.27	37.54	30.91	4.73	34.62	29.45	5.24
	67 (19.4)	51.78	37.65	3.17	49.22	36.50	3.50	46.50	35.26	3.88	43.64	33.97	4.30	40.64	32.61	4.76	37.48	31.13	5.27
	72 (22.2)	56.83	30.24	3.20	53.99	29.12	3.53	51.00	27.94	3.91	47.86	26.71	4.33	44.56	25.40	4.80	41.08	24.03	5.30
1800	57 (13.9)	48.51	48.51	3.20	46.46	46.46	3.54	44.24	44.24	3.92	41.88	41.88	4.34	39.36	39.36	4.81	36.67	36.67	5.32
	62 (16.7)	48.63	48.63	3.20	46.54	46.54	3.54	44.31	44.31	3.92	41.95	41.95	4.34	39.42	39.42	4.81	36.72	36.72	5.32
	63 (17.2)	48.76	38.03	3.20	46.31	36.85	3.54	43.69	35.57	3.91	40.94	34.21	4.33	38.07	32.76	4.80	35.07	31.19	5.30
	67 (19.4)	52.73	39.96	3.23	50.06	38.75	3.56	47.24	37.47	3.94	44.28	36.10	4.36	41.18	34.64	4.83	37.93	33.06	5.33
	72 (22.2)	57.85	31.65	3.26	54.90	30.49	3.60	51.79	29.26	3.97	48.53	27.98	4.39	45.11	26.62	4.86	41.53	25.19	5.36

*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.

48 Heating Extended Performance Table –10–60 (–23.3–15.6°C)

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES deg F (deg 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	15.24	14.02	3.00	20.15	18.54	3.09	25.29	23.21	3.21	29.94	27.15	3.32	35.20	30.84	3.45	41.16	41.16	3.62	48.10	48.10	3.83	54.59	54.59	4.07
	1600	15.50	14.26	3.04	20.44	18.80	3.12	25.55	23.45	3.23	30.25	27.43	3.33	35.57	31.17	3.45	41.64	41.64	3.63	47.73	47.73	3.81	53.60	53.60	4.04
	1800	15.74	14.48	3.09	20.70	19.05	3.16	25.78	23.66	3.26	30.52	27.68	3.35	35.88	31.43	3.47	41.86	41.86	3.63	47.20	47.20	3.82	52.65	52.65	4.03
70 (21.1)	1400	14.75	13.57	3.12	19.66	18.09	3.22	25.02	22.96	3.36	29.60	26.84	3.47	34.73	30.43	3.61	40.57	40.57	3.79	47.52	47.52	4.02	54.22	54.22	4.26
	1600	15.01	13.81	3.16	19.94	18.34	3.25	25.26	23.19	3.37	29.91	27.12	3.48	35.11	30.76	3.61	41.02	41.02	3.78	47.42	47.42	3.98	53.38	53.38	4.23
	1800	15.27	14.04	3.21	20.24	18.62	3.29	25.51	23.41	3.40	30.18	27.37	3.50	35.42	31.04	3.63	41.43	41.43	3.80	46.98	46.98	3.99	52.55	52.55	4.22
75 (23.9)	1400	14.22	13.08	3.25	19.13	17.60	3.36	24.68	22.65	3.51	29.23	26.51	3.64	34.26	30.02	3.78	39.96	39.96	3.96	46.79	46.79	4.21	53.79	53.79	4.46
	1600	14.48	13.32	3.29	19.44	17.89	3.39	24.97	22.92	3.53	29.54	26.79	3.64	34.63	30.34	3.78	40.40	40.40	3.95	47.06	47.06	4.16	53.09	53.09	4.42
	1800	14.73	13.55	3.34	19.71	18.14	3.43	25.22	23.15	3.56	29.82	27.04	3.66	34.95	30.62	3.79	40.82	40.82	3.98	46.70	46.70	4.17	52.35	52.35	4.42

Specifications subject to change without notice.

PERFORMANCE DATA (CONT)

60 Cooling Extended Performance Table

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F (deg C)																	
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	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	
1750	57 (13.9)	56.58	56.58	3.82	54.25	54.25	4.23	51.74	51.74	4.69	49.03	49.03	5.20	46.02	46.02	5.80	42.74	42.74	6.47
	62 (16.7)	58.15	51.34	3.84	55.29	49.87	4.24	52.31	48.23	4.69	49.14	49.14	5.21	46.10	46.10	5.80	42.80	42.80	6.47
	63 (17.2)	58.96	41.68	3.85	56.05	40.35	4.25	52.93	38.94	4.70	49.57	37.43	5.21	45.96	35.80	5.79	42.09	34.04	6.46
	67 (19.4)	63.58	43.48	3.90	60.40	42.13	4.30	57.00	40.70	4.75	53.35	39.18	5.26	49.42	37.52	5.84	45.21	35.73	6.50
	72 (22.2)	69.81	35.09	3.96	66.25	33.84	4.37	62.44	32.52	4.82	58.39	31.04	5.33	54.03	29.43	5.90	49.34	27.71	6.55
2000	57 (13.9)	59.07	59.07	3.93	56.53	56.53	4.33	53.81	53.81	4.79	50.87	50.87	5.31	47.61	47.61	5.89	44.07	44.07	6.56
	62 (16.7)	59.71	55.08	3.93	56.79	56.35	4.34	53.90	53.90	4.79	50.94	50.94	5.31	47.68	47.68	5.90	44.13	44.13	6.56
	63 (17.2)	60.33	44.49	3.94	57.22	43.10	4.34	53.93	41.62	4.79	50.41	40.03	5.30	46.64	38.29	5.88	42.63	36.38	6.54
	67 (19.4)	64.95	46.50	3.99	61.60	45.09	4.39	58.02	43.59	4.84	54.20	41.98	5.35	50.08	40.22	5.93	45.71	38.29	6.58
	72 (22.2)	71.19	37.15	4.06	67.47	35.74	4.46	63.50	34.29	4.91	59.27	32.74	5.42	54.69	31.06	5.99	49.83	29.27	6.63
2250	57 (13.9)	61.14	61.14	4.03	58.43	58.43	4.43	55.52	55.52	4.89	52.36	52.36	5.40	48.89	48.89	5.99	45.23	45.23	6.65
	62 (16.7)	61.25	61.25	4.03	58.52	58.52	4.43	55.60	55.60	4.89	52.43	52.43	5.40	48.95	48.95	5.99	45.28	45.28	6.65
	63 (17.2)	61.37	47.18	4.03	58.11	45.72	4.43	54.69	44.17	4.88	51.04	42.48	5.38	47.15	40.61	5.96	43.03	38.53	6.62
	67 (19.4)	65.96	49.40	4.08	62.50	47.93	4.48	58.79	46.35	4.93	54.82	44.65	5.44	50.57	42.76	6.01	46.07	40.65	6.66
	72 (22.2)	72.28	38.89	4.15	68.41	37.47	4.55	64.28	35.97	5.00	59.88	34.37	5.51	55.14	32.63	6.08	50.13	30.78	6.71

*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.

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

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES deg F (deg 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	21.10	19.41	3.70	26.76	24.62	3.86	32.87	30.17	4.02	39.65	35.96	4.20	46.23	40.51	4.36	53.69	53.69	4.55	62.45	62.45	4.80	72.83	72.83	5.13
	2000	21.50	19.78	3.75	27.19	25.02	3.90	33.42	30.68	4.05	40.05	36.32	4.20	46.75	40.96	4.35	54.33	54.33	4.52	63.26	63.26	4.75	73.85	73.85	5.06
	2250	21.87	20.12	3.81	27.58	25.37	3.95	34.54	31.70	4.11	40.41	36.65	4.23	47.21	41.37	4.36	54.88	54.88	4.52	63.92	63.92	4.74	74.66	74.66	5.04
70 (21.1)	1750	20.30	18.67	3.85	26.01	23.93	4.02	32.15	29.51	4.19	39.25	35.59	4.39	45.69	40.03	4.56	52.98	52.98	4.76	61.58	61.58	5.02	71.76	71.76	5.35
	2000	20.71	19.05	3.90	26.46	24.34	4.06	32.62	29.94	4.22	39.63	35.94	4.39	46.19	40.47	4.55	53.62	53.62	4.73	62.37	62.37	4.96	72.76	72.76	5.27
	2250	21.08	19.39	3.96	26.85	24.71	4.11	33.01	30.30	4.25	40.01	36.29	4.42	46.63	40.86	4.56	54.16	54.16	4.73	63.03	63.03	4.95	73.56	73.56	5.26
75 (23.9)	1750	19.43	17.88	4.01	25.22	23.21	4.19	31.39	28.81	4.38	38.81	35.20	4.60	45.13	39.54	4.78	52.29	52.29	4.98	60.72	60.72	5.24	70.71	70.71	5.58
	2000	19.85	18.26	4.06	25.67	23.62	4.23	31.88	29.26	4.40	39.22	35.57	4.60	45.64	39.99	4.76	52.90	52.90	4.95	61.50	61.50	5.18	71.69	71.69	5.50
	2250	20.22	18.61	4.12	26.07	23.98	4.28	32.31	29.65	4.44	39.61	35.92	4.62	46.08	40.37	4.77	53.44	53.44	4.94	62.15	62.15	5.16	72.44	72.44	5.47

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 (26.6°C) edb temperature of air entering evaporator coil. Below 80°F (26.6°C) edb, subtract (corr factor x CFM) from SHC.

Above 80°F (26.6°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.

Specifications subject to change without notice.

PERFORMANCE DATA (CONT)

Multiplication Factors

HEATER VOLT RATING	VOLTAGE DISTRIBUTION	MULTIPLICATION FACTOR
240	200	0.69
	208	0.75
	230	0.92
	240	1.00
480	460	0.92

Dry Coil Air Delivery CFM* – Horizontal Discharge – Unit 24–60

Unit	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
24	Low	Blue	cfm	754	650	536	429	---	---	---	---	---
	Med-Low	Pink	cfm	851	777	675	591	475	---	---	---	---
	Medium[1]	Red	cfm	941	851	774	684	576	479	---	---	---
	Med-High	Orange	cfm	1009	917	840	759	667	577	447	---	---
	High	Black	cfm	1241	1167	1111	1036	969	881	818	731	640
30	Low	Blue	cfm	741	638	547	415	---	---	---	---	---
	Med-Low	Pink	cfm	973	887	823	733	665	538	451	---	---
	Medium	Red	cfm	1088	1023	954	881	800	723	658	563	461
	Med-High[1]	Orange	cfm	1140	1064	996	915	840	758	687	564	480
	High	Black	cfm	1202	1140	1082	1015	961	881	810	732	631
36	Low	Blue	cfm	1176	1121	1079	1019	974	920	877	826	754
	Med-Low	Pink	cfm	1295	1234	1182	1126	1075	1016	955	898	857
	Medium[1]	Red	cfm	1345	1282	1235	1194	1140	1095	1027	974	921
	Med-High	Orange	cfm	1505	1452	1413	1358	1323	1282	1234	1169	1130
	High	Black	cfm	1705	1643	1607	1568	1518	1483	1448	1404	1360
42	Low	Blue	cfm	1295	1234	1182	1126	1075	1016	955	898	857
	Med-Low	Pink	cfm	1345	1282	1235	1194	1140	1095	1027	974	921
	Medium	Red	cfm	1505	1452	1413	1358	1323	1282	1234	1169	1130
	Med-High[1]	Orange	cfm	1545	1492	1449	1411	1362	1313	1278	1231	1188
	High	Black	cfm	1705	1643	1607	1568	1518	1483	1448	1404	1360
48	Low	Blue	cfm	1430	1374	1327	1267	1223	1176	1127	1061	1016
	Med-Low	Pink	cfm	1445	1389	1341	1281	1236	1189	1139	1072	1027
	Medium[1]	Red	cfm	1678	1635	1602	1558	1513	1474	1438	1404	1349
	Med-High	Orange	cfm	2131	2088	2065	2013	1982	1941	1888	1860	1785
	High	Black	cfm	2461	2409	2339	2286	2192	2140	2062	1968	1874
60	Low	Blue	cfm	1445	1389	1341	1281	1236	1189	1139	1072	1027
	Med-Low	Pink	cfm	1678	1635	1602	1558	1513	1474	1438	1404	1349
	Medium[1]	Red	cfm	1962	1915	1880	1843	1794	1753	1711	1675	1628
	Med-High	Orange	cfm	2131	2088	2065	2013	1982	1941	1888	1860	1785
	High	Black	cfm	2461	2409	2339	2286	2192	2140	2062	1968	1874

* Air delivery values are without air filter and are for dry coil (See Wet Coil Pressure Drop Table).
[1] Factory–shipped cooling/heat pump heating speed
NOTE: Deduct field–supplied air filter pressure drop and wet coil pressure drop to obtain external static pressure available for ducting.
Shaded areas indicate speed/static combinations that are not permitted for dehumidification speed.
Note: Deduct 10% for 208 volt operation.

Specifications subject to change without notice.

Dry Coil Air Delivery – Downflow Discharge

UNIT	MOTOR SPEED	WIRE COLOR		EXTERNAL STATIC PRESSURE (IN. W.C.)									
				0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.0
24	Low	Blue	CFM	809	664	554	447	––	––	––	––	––	––
			WATTS	85	82	87	95	––	––	––	––	––	––
			BHP	0.09	0.09	0.09	0.10	––	––	––	––	––	––
	MedLow	Pink	CFM	875	787	693	612	498	392	––	––	––	––
			WATTS	101	111	115	125	131	142	––	––	––	––
			BHP	0.11	0.12	0.12	0.13	0.14	0.15	––	––	––	––
	Medium[1]	Red	CFM	939	860	748	663	591	472	399	––	––	––
			WATTS	119	124	134	138	147	155	164	––	––	––
			BHP	0.13	0.13	0.14	0.15	0.16	0.17	0.18	––	––	––
	MedHigh	Orange	CFM	1026	949	873	786	694	604	516	––	––	––
			WATTS	146	151	161	167	177	183	195	––	––	––
			BHP	0.16	0.16	0.17	0.18	0.19	0.20	0.21	––	––	––
	High	Black	CFM	1264	1202	1134	1070	1002	931	870	806	699	610
			WATTS	250	261	274	279	290	296	308	319	328	332
			BHP	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.35	0.36
30	Low	Blue	CFM	756	669	548	457	––	––	––	––	––	––
			WATTS	84	90	96	106	––	––	––	––	––	––
			BHP	0.09	0.10	0.10	0.11	––	––	––	––	––	––
	MedLow	Pink	CFM	1002	928	842	733	660	560	450	––	––	––
			WATTS	144	155	161	173	185	192	203	––	––	––
			BHP	0.15	0.17	0.17	0.19	0.20	0.21	0.22	––	––	––
	Medium	Red	CFM	1110	1025	967	879	814	706	611	509	––	––
			WATTS	188	195	205	211	223	236	243	255	––	––
			BHP	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	––	––
	MedHigh[1]	Orange	CFM	1160	1091	1004	945	866	804	699	615	496	––
			WATTS	213	225	232	243	249	261	273	285	291	––
			BHP	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.31	0.31	––
	High	Black	CFM	1240	1173	1110	1031	966	902	821	726	626	––
			WATTS	254	266	274	284	295	302	315	327	331	––
			BHP	0.27	0.29	0.29	0.30	0.32	0.32	0.34	0.35	0.35	––
36	Low	Blue	CFM	1307	1249	1192	1138	1084	1038	987	934	886	840
			WATTS	158	160	173	180	193	205	218	230	237	249
			BHP	0.17	0.17	0.19	0.19	0.21	0.22	0.23	0.25	0.25	0.27
	MedLow	Pink	CFM	1365	1324	1284	1233	1181	1127	1084	1039	984	939
			WATTS	177	189	201	210	222	236	248	261	269	281
			BHP	0.19	0.20	0.22	0.23	0.24	0.25	0.27	0.28	0.29	0.30
	Medium[1]	Red	CFM	1425	1384	1339	1301	1254	1199	1151	1104	1065	1015
			WATTS	197	210	223	235	248	257	271	284	296	305
			BHP	0.21	0.23	0.24	0.25	0.27	0.28	0.29	0.30	0.32	0.33
	MedHigh	Orange	CFM	1582	1549	1509	1469	1433	1392	1346	1300	1249	1213
			WATTS	267	280	294	308	322	336	344	359	374	387
			BHP	0.29	0.30	0.32	0.33	0.35	0.36	0.37	0.38	0.40	0.42
	High	Black	CFM	1775	1736	1696	1660	1622	1588	1557	1516	1472	1426
			WATTS	371	386	401	410	424	439	453	468	483	497
			BHP	0.40	0.41	0.43	0.44	0.45	0.47	0.49	0.50	0.52	0.53

Specifications subject to change without notice.

Dry Coil Air Delivery – Downflow Discharge

UNIT	MOTOR SPEED	WIRE COLOR		EXTERNAL STATIC PRESSURE (IN. W.C.)									
				0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.0
42	Low	Blue	CFM	1365	1324	1284	1233	1181	1127	1084	1039	984	939
			WATTS	177	189	201	210	222	236	248	261	269	281
			BHP	0.19	0.20	0.22	0.23	0.24	0.25	0.27	0.28	0.29	0.30
	MedLow	Pink	CFM	1425	1384	1339	1301	1254	1199	1151	1104	1065	1015
			WATTS	197	210	223	235	248	257	271	284	296	305
			BHP	0.21	0.23	0.24	0.25	0.27	0.28	0.29	0.30	0.32	0.33
	Medium	Red	CFM	1582	1549	1509	1469	1433	1392	1346	1300	1249	1213
			WATTS	267	280	294	308	322	336	344	359	374	387
			BHP	0.29	0.30	0.32	0.33	0.35	0.36	0.37	0.38	0.40	0.42
	MedHigh[1]	Orange	CFM	1623	1586	1553	1511	1470	1433	1393	1350	1309	1261
			WATTS	285	299	312	324	335	349	363	378	393	407
			BHP	0.31	0.32	0.33	0.35	0.36	0.37	0.39	0.41	0.42	0.44
	High	Black	CFM	1775	1736	1696	1660	1622	1588	1557	1516	1472	1426
			WATTS	371	386	401	410	424	439	453	468	483	497
			BHP	0.40	0.41	0.43	0.44	0.45	0.47	0.49	0.50	0.52	0.53
48	Low	Blue	CFM	1491	1445	1403	1358	1306	1261	1199	1169	1122	1069
			WATTS	232	239	254	262	278	293	303	316	323	335
			BHP	0.25	0.26	0.27	0.28	0.30	0.31	0.32	0.34	0.35	0.36
	MedLow	Pink	CFM	1479	1436	1387	1346	1298	1253	1206	1160	1114	1061
			WATTS	224	239	247	262	270	284	300	307	319	330
			BHP	0.24	0.26	0.26	0.28	0.29	0.30	0.32	0.33	0.34	0.35
	Medium[1]	Red	CFM	1813	1785	1745	1709	1663	1632	1592	1548	1506	1450
			WATTS	411	427	435	451	462	478	489	504	518	529
			BHP	0.44	0.46	0.47	0.48	0.50	0.51	0.52	0.54	0.56	0.57
	MedHigh	Orange	CFM	2178	2148	2105	2073	2036	2002	1967	1919	1845	1751
			WATTS	674	691	703	717	733	743	758	754	734	701
			BHP	0.72	0.74	0.75	0.77	0.79	0.80	0.81	0.81	0.79	0.75
	High	Black	CFM	2480	2432	2375	2322	2236	2161	2085	2006	1917	1808
			WATTS	1029	1012	995	975	941	908	869	836	796	751
			BHP	1.10	1.09	1.07	1.05	1.01	0.97	0.93	0.90	0.85	0.81
60	Low	Blue	CFM	1479	1436	1387	1346	1298	1253	1206	1160	1114	1061
			WATTS	224	239	247	262	270	284	300	307	319	330
			BHP	0.24	0.26	0.26	0.28	0.29	0.30	0.32	0.33	0.34	0.35
	MedLow	Pink	CFM	1841	1796	1761	1724	1690	1651	1616	1578	1527	1478
			WATTS	425	434	453	460	476	485	501	508	525	542
			BHP	0.46	0.47	0.49	0.49	0.51	0.52	0.54	0.54	0.56	0.58
	Medium[1]	Red	CFM	1944	1913	1872	1838	1801	1771	1731	1698	1655	1613
			WATTS	486	501	511	529	537	554	565	578	595	603
			BHP	0.52	0.54	0.55	0.57	0.58	0.59	0.61	0.62	0.64	0.65
	MedHigh	Orange	CFM	2178	2148	2105	2073	2036	2002	1967	1919	1845	1751
			WATTS	674	691	703	717	733	743	758	754	734	701
			BHP	0.72	0.74	0.75	0.77	0.79	0.80	0.81	0.81	0.79	0.75
	High	Black	CFM	2480	2432	2375	2322	2236	2161	2085	2006	1917	1808
			WATTS	1029	1012	995	975	941	908	869	836	796	751
			BHP	1.10	1.09	1.07	1.05	1.01	0.97	0.93	0.90	0.85	0.81

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

[1] Factory–shipped cooling speed.

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

Shaded areas indicate speed/static combinations that are not permitted.

Specifications subject to change without notice.

PERFORMANCE DATA (CONT)

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

FILTER SIZE IN. (MM)	COOLING TONS	STANDARD CFM (SCFM)																
		600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
600–1400 CFM 12x20x1+12x20x1 (305x508x25+305x508x25)	**2.0, 2.5, 3.0**	0.03	0.04	0.05	0.06	0.06	0.07	0.07	0.08	0.08	–	–	–	–	–	–	–	–
1200–1800CFM 16x24x1+14x24x1 (406x610x25+356x610x25)	**3.5, 4.0**	–	–	–	–	0.04	0.05	0.06	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.12	–	–
1500–2200CFM 16x24x1+18x24x1 (406x610x25+457x610x25)	**5.0**	–	–	–	–	–	–	–	–	–	0.04	0.06	0.08	0.10	0.11	0.13	0.14	0.15

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

UNIT SIZE	STANDARD CFM (SCFM)																
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
24	0.03	0.04	0.04	0.05	0.06												
30				0.05	0.06	0.07	0.08	0.11									
36				0.06	0.06	0.09	0.10	0.11	0.14								
42					0.05	0.05	0.06	0.07	0.08	0.08	0.09	0.09	0.11				
48							0.04	0.06	0.09	0.10	0.10	0.11	0.12	0.13	0.14		
60										0.06	0.07	0.01	0.08	0.09	0.10	0.12	0.13

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

FILTER SIZE IN. (MM)	COOLING TONS	STANDARD CFM (SCFM)																
		600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
600–1400 CFM 12x20x1+12x20x1 (305x508x25+305x508x25)	**2.0, 2.5, 3.0**	–	–	0.08	0.09	0.10	0.11	0.11	0.13	0.14	–	–	–	–	–	–	–	–
1200–1800CFM 16x24x1+14x24x1 (406x610x25+356x610x25)	**3.5, 4.0**	–	–	–	–	–	0.09	0.09	0.10	0.12	0.13	0.15	0.17	0.17	0.19	0.21	–	–
1500–2200CFM 16x24x1+18x24x1 (406x610x25+457x610x25)	**5.0**	–	–	–	–	–	–	–	–	–	0.15	0.17	0.18	0.20	0.21	0.22	0.23	0.23

Electric Heat Pressure Drop Table (IN. W.C.)
Small Cabinet: 24–36

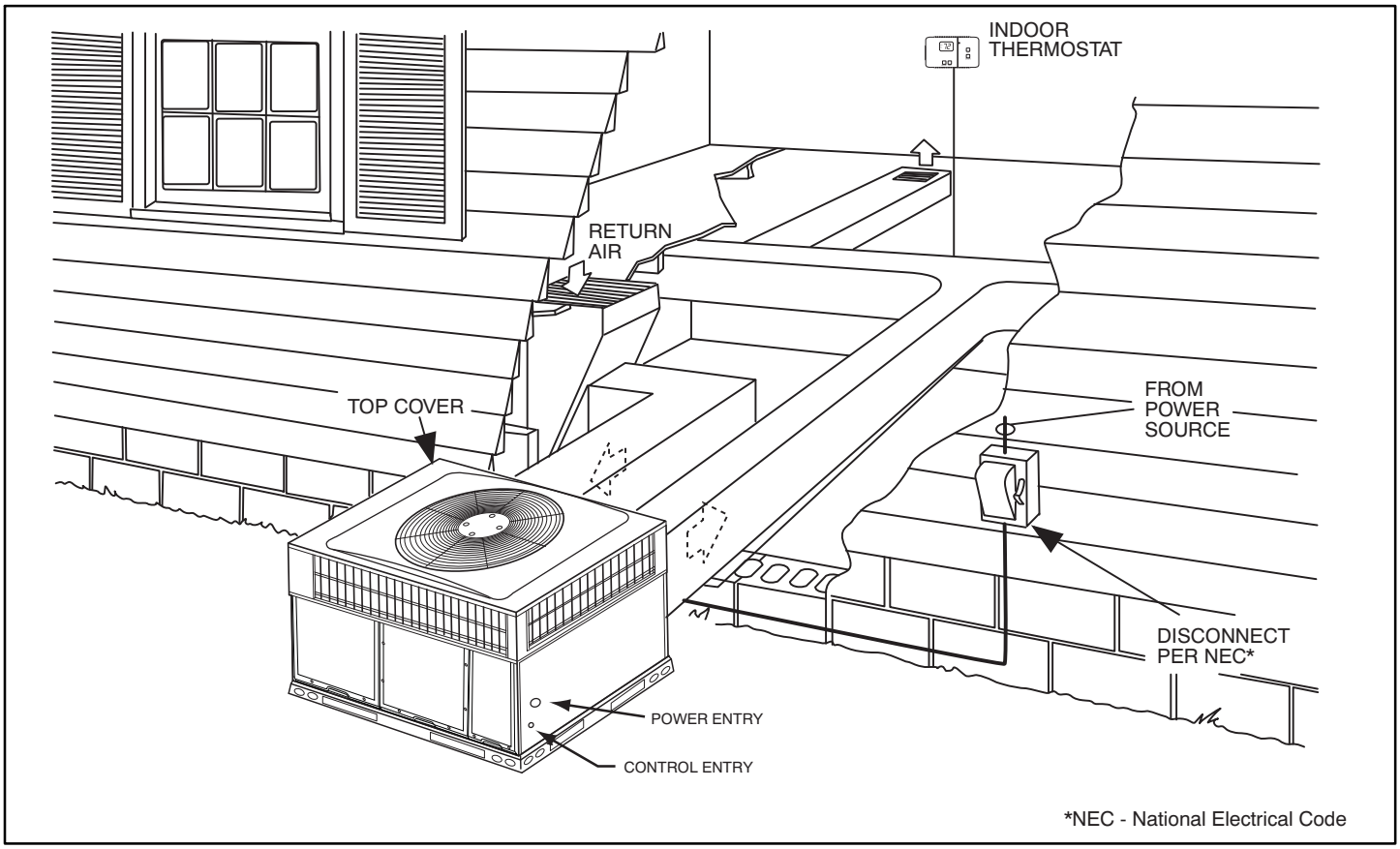
STATIC	STANDARD CFM (SCFM)											
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
5kw	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07
7.5 kw	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.05	0.07	0.08	0.09
10 kw	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.07	0.09	0.10	0.11
15 kw	0.00	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

Electric Heat Pressure Drop Table (IN. W.C.)
Large Cabinet 42–60

STATIC	STANDARD CFM (SCFM)														
	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
5kw	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
7.5 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
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

Specifications subject to change without notice.

TYPICAL PIPING AND WIRING



A09240

APPLICATION DATA

Condensate trap — A 2–in. (51 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. Units installed in horizontal discharge orientation do not require duct covers.

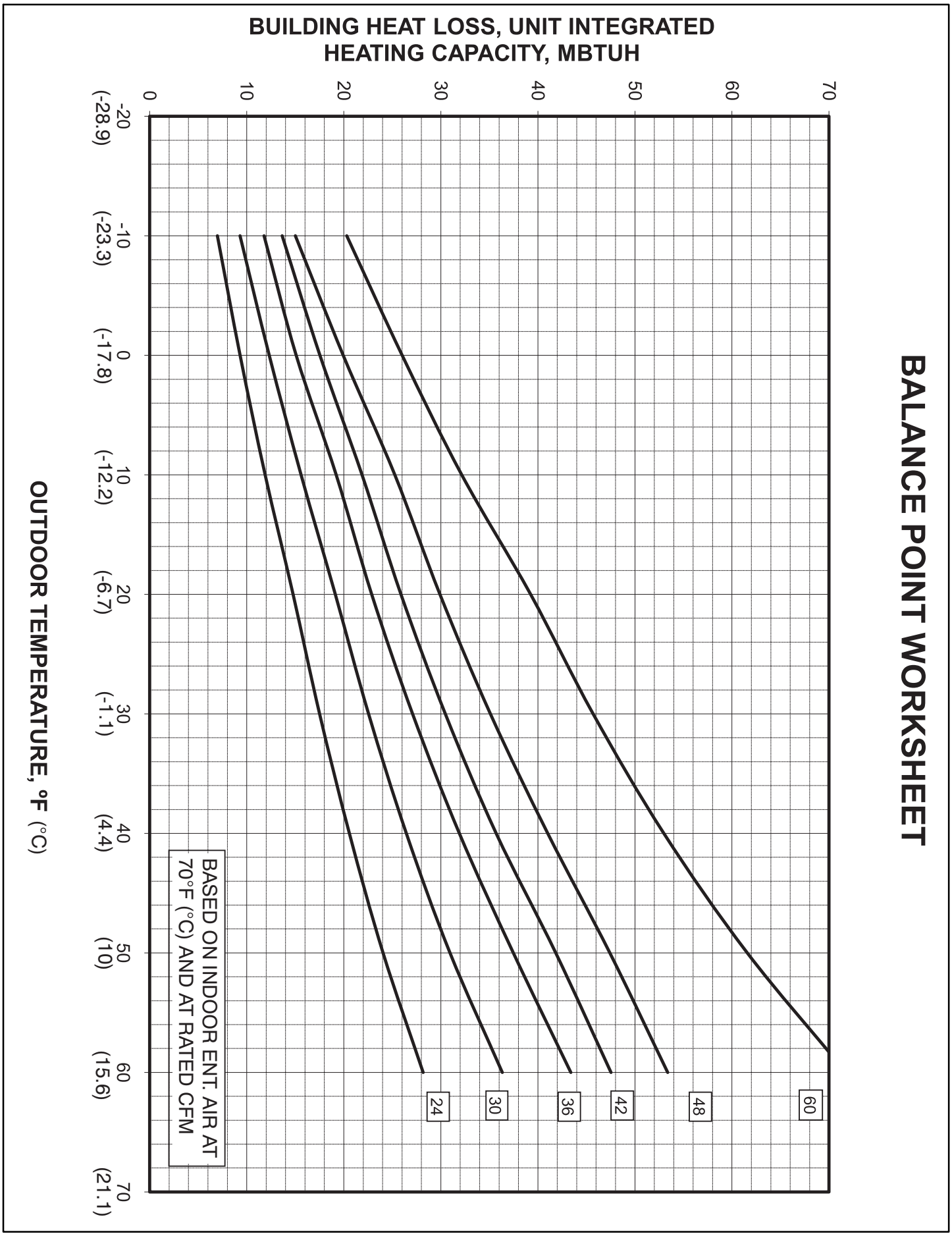
Maximum cooling airflow — To minimize the possibility of condensate blow–off from the evaporator, airflow through the units should not exceed 450 CFM per ton.

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 however, low airflow could result in indoor coil freezing and/or refrigerant floodback.

Minimum ambient cooling operation temperature — All standard units have a minimum ambient cooling operating temperature of 40°F (4.4°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



A09601

Specifications subject to change without notice.

ELECTRICAL DATA

MODEL	NOMINAL V-PH-HZ	VOLTAGE RANGE		COMPRESSOR		OFM	IFM	ELECTRIC HEAT		POWER SUPPLY	MOCP
		MIN	MAX	RLA	LRA	FLA	FLA	NOMINAL kW	FLA	MCA	
24	208/230-1-60	187	253	13.5	58.3	0.7	4.1	-/-	-/-	21.7	30
								3.8/5	18.1/20.8	44.3/47.7	45/50
								5.4/7.2	25.9/30	54.1/59.2	60/60
								7.5/10	36.1/41.7	66.8/73.8	70/80
30	208/230-1-60	187	253	14.1	73	1.2	4.1	-/-	-/-	22.9	35
								3.8/5	18.1/20.8	45.6/48.9	50/50
								5.4/7.2	25.9/30	55.3/60.4	60/70
								7.5/10	36.1/41.7	68.1/75.1	70/80
								11.3/15	54.2/62.5	90.7/101.1	100/110
	208/230-3-60	187	253	9	58	1.2	4.1	-/-	-/-	16.6	25
								3.8/5	10.4/12	29.6/31.6	30/35
								7.5/10	20.8/24.1	42.6/46.7	45/50
								11.3/15	31.2/36.1	55.6/61.7	60/70
36	208/230-1-60	187	253	17.1	79	1.2	6.0	-/-	-/-	28.6	40
								3.8/5	18.1/20.8	51.2/54.6	60/60
								5.4/7.2	25.9/30	61/66.1	70/70
								7.5/10	36.1/41.7	73.7/80.7	80/90
								11.3/15	54.2/62.5	96.3/106.7	100/110
	208/230-3-60	187	253	11.5	73	1.2	6.0	-/-	-/-	21.6	30
								3.8/5	10.4/12	34.6/36.6	35/40
								7.5/10	20.8/24.1	47.6/51.7	50/60
								11.3/15	31.2/36.1	60.6/66.7	70/70
	460-3-60	414	506	5.8	38	0.5	3.0	-/-	-/-	10.8	15
								3.8/5	6	18.3/18.3	20
								7.5/10	12	25.8/25.8	30
								11.3/15	18	33.3/33.3	35
42	208/230-1-60	187	253	20.6	112	1.2	6.0	-/-	-/-	33	50
								3.8/5	18.1/20.8	55.6/59	60/60
								5.4/7.2	25.9/30	65.3/70.5	70/80
								7.5/10	36.1/41.7	78.1/85.1	80/90
								11.3/15	54.2/62.5	100.7/111.1	110/125
								15/20	72.2/83.3	123.2/137.1	125/150
	208/230-3-60	187	253	13.5	88	1.2	6.0	-/-	-/-	24.1	35
								3.8/5	10.4/12	37.1/39.1	40/40
								7.5/10	20.8/24.1	50.1/54.2	60/60
								11.3/15	31.2/36.1	63.1/69.2	70/70
								15/20	41.4/47.9	75.8/84	80/90
	460-3-60	414	506	6.1	44	0.5	3.0	-/-	-/-	11.1	15
								3.8/5	6	18.6/18.6	20
								7.5/10	12	26.1/26.1	30
								11.3/15	18	33.6/33.6	35
								15/20	24.1	41.3/41.3	45
48	208/230-1-60	187	253	23.4	109	1.2	7.6	-/-	-/-	38.1	50
								3.8/5	18.1/20.8	60.7/64.1	70/70
								5.4/7.2	25.9/30	70.4/75.6	80/80
								7.5/10	36.1/41.7	83.2/90.2	90/100
								11.3/15	54.2/62.5	105.8/116.2	110/125
								15/20	72.2/83.3	128.3/142.2	150/150
	208/230-3-60	187	253	16	83	1.2	7.6	-/-	-/-	28.8	40
								3.8/5	10.4/12	41.8/43.8	45/45
								7.5/10	20.8/24.1	54.8/58.9	60/60
								11.3/15	31.2/36.1	67.8/73.9	70/80
								15/19.91	41.4/47.9	80.6/88.7	90/90
	460-3-60	414	506	7.2	41	0.5	3.8	-/-	-/-	13.3	20
								3.8/5	6	20.8/20.8	25
								7.5/10	12	28.3/28.3	30
								11.3/15	18	35.8/35.8	40
								15/20	24.1	43.4/43.4	45
60	208/230-1-60	187	253	29.6	134	1.2	7.6	-/-	-/-	45.8	60
								3.8/5	18.1/20.8	68.4/71.8	70/80
								5.4/7.2	25.9/30	78.2/83.3	80/90
								7.5/10	36.1/41.7	90.9/97.9	100/100
								11.3/15	54.2/62.5	113.6/123.9	125/125
								15/20	72.2/83.3	136.1/149.9	150/150
	208/230-3-60	187	253	19.9	110	1.2	7.6	-/-	-/-	33.7	50
								3.8/5	10.4/12	46.7/48.7	50/50
								7.5/10	20.8/24.1	59.7/63.8	60/70
								11.3/15	31.2/36.1	72.7/78.8	80/80
								15/19.91	41.4/47.9	85.4/93.6	90/100
	460-3-60	414	506	8.6	52	0.6	3.8	-/-	-/-	15.2	20
								3.8/5	6	22.7/22.7	25
								7.5/10	12	30.2/30.2	35
								11.3/15	18	37.7/37.7	40
								15/20	24.1	45.3/45.3	50

See Legend and Notes.

LEGEND

FLA - Full Load Amps
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

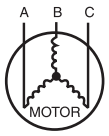
NOTES:

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

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

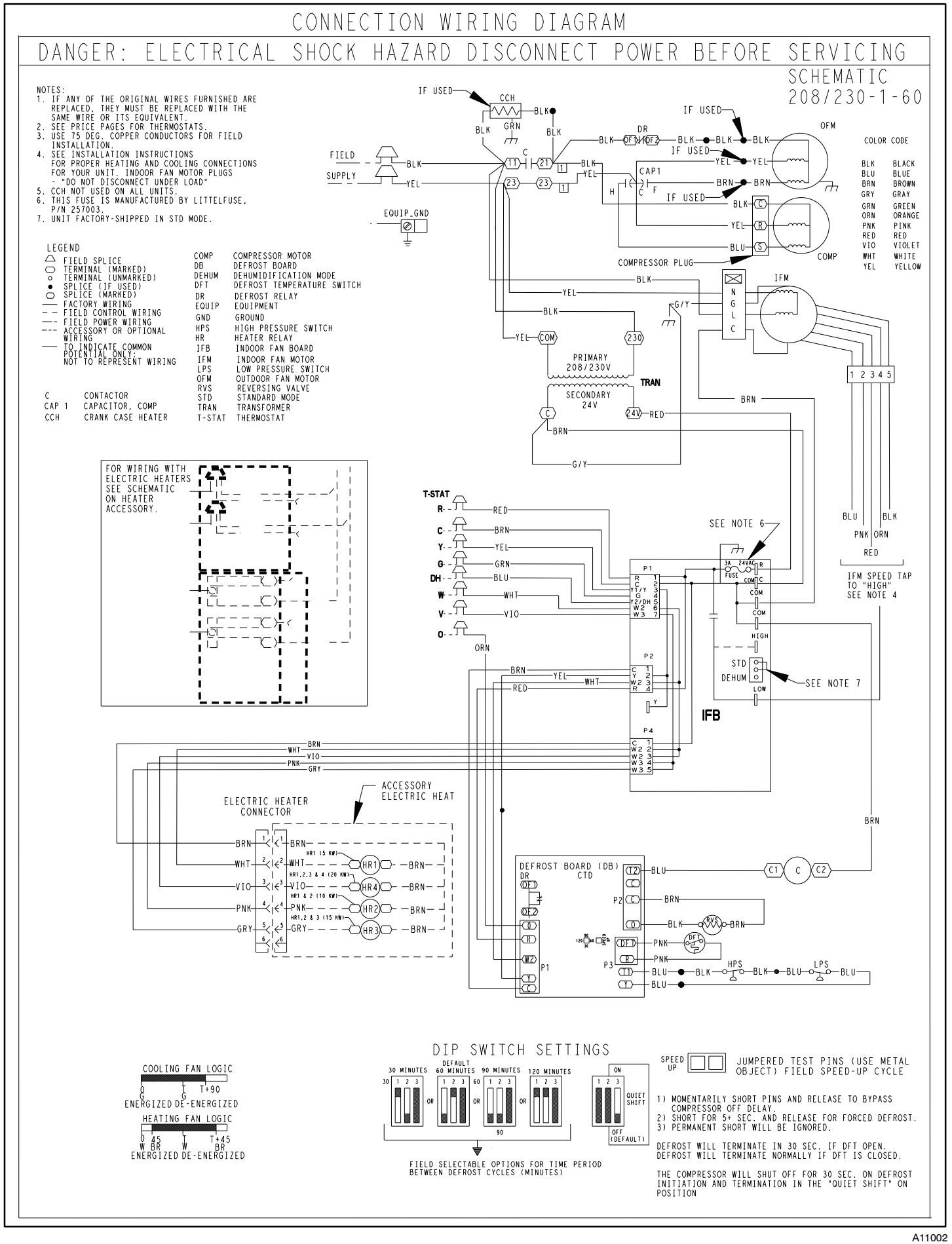
$$= 0.8\%$$

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.

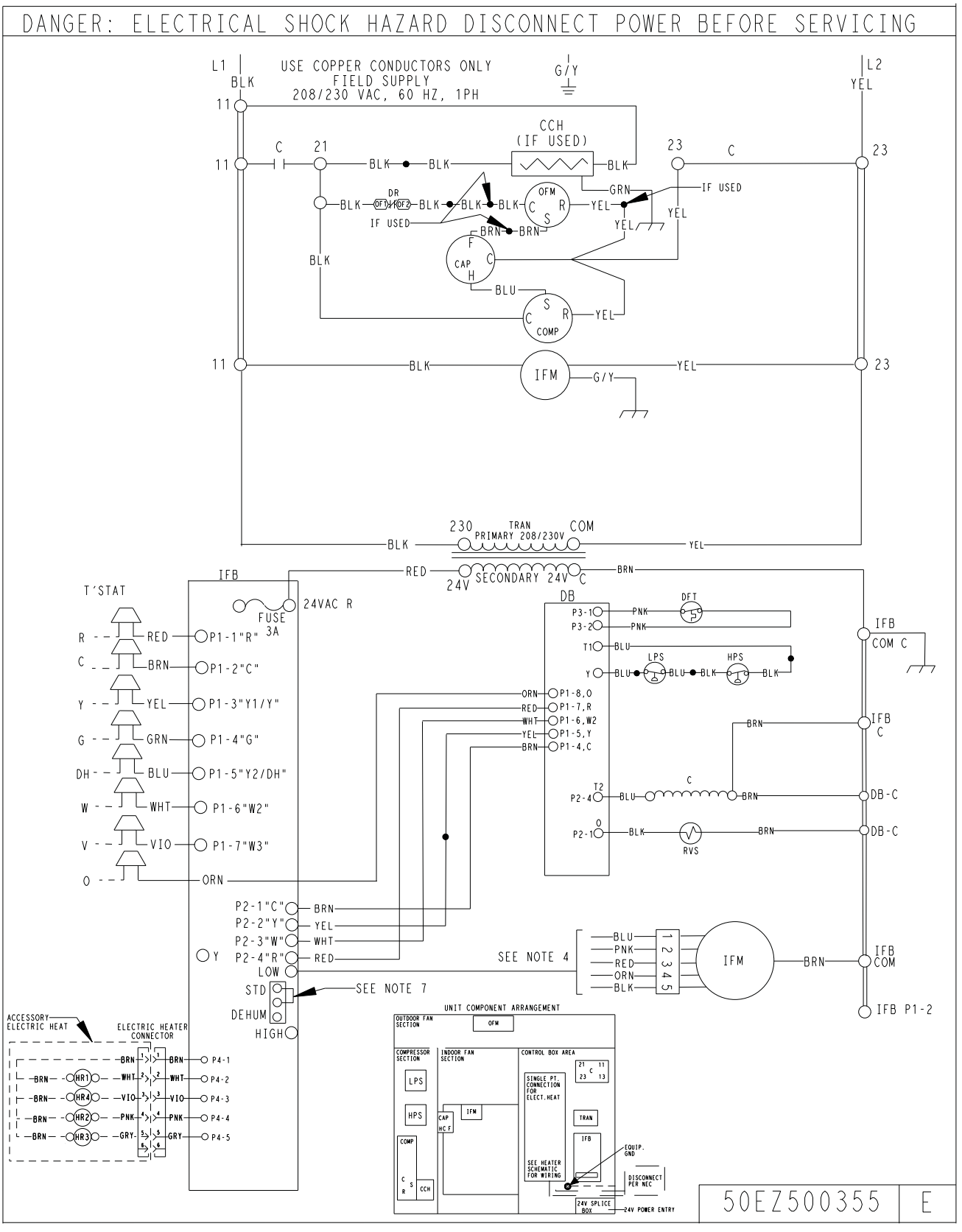
A09604

TYPICAL CONNECTION WIRING SCHEMATIC – 208/230–1–60



A11002

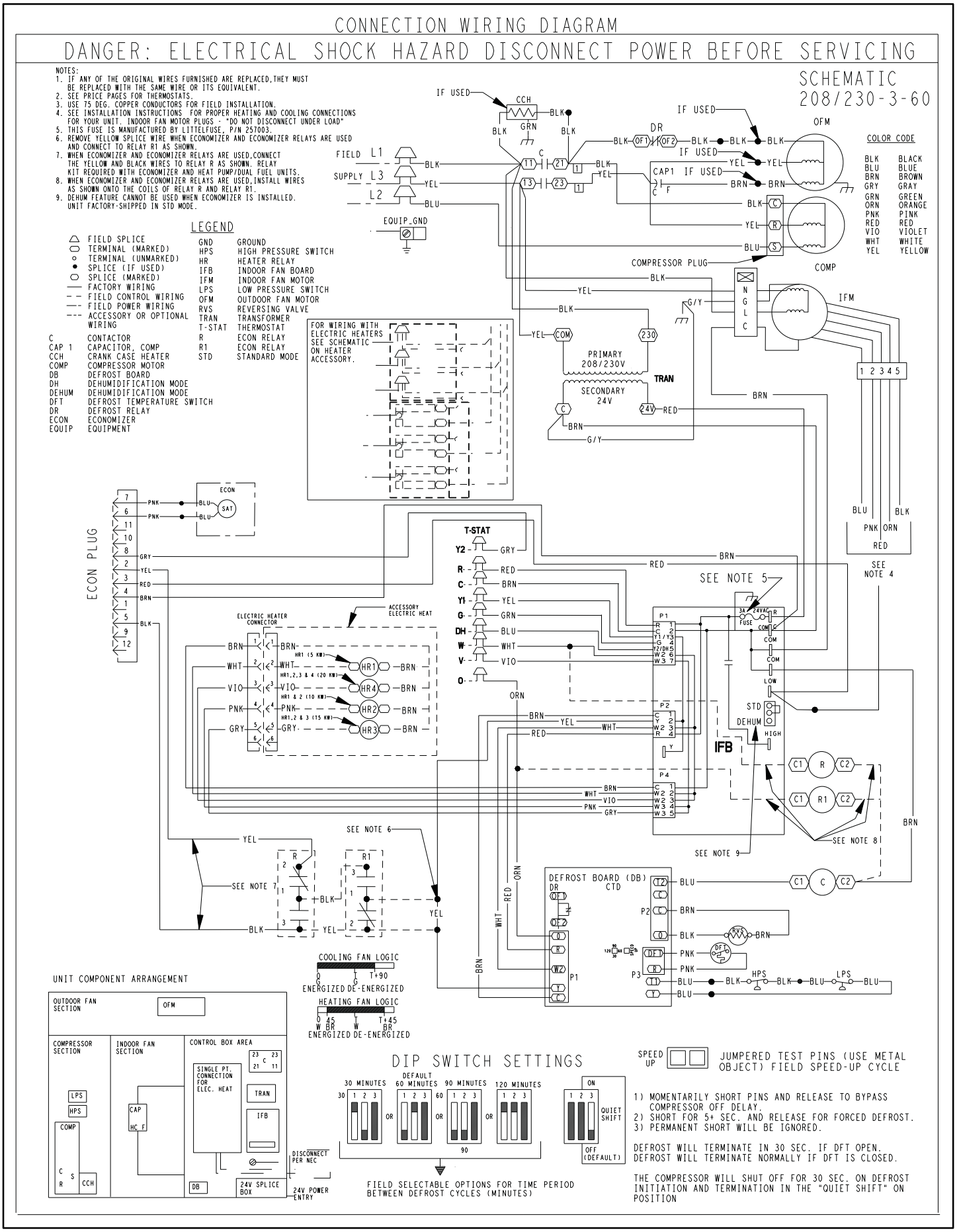
TYPICAL LADDER WIRING SCHEMATIC – 208/230–1–60



A11001

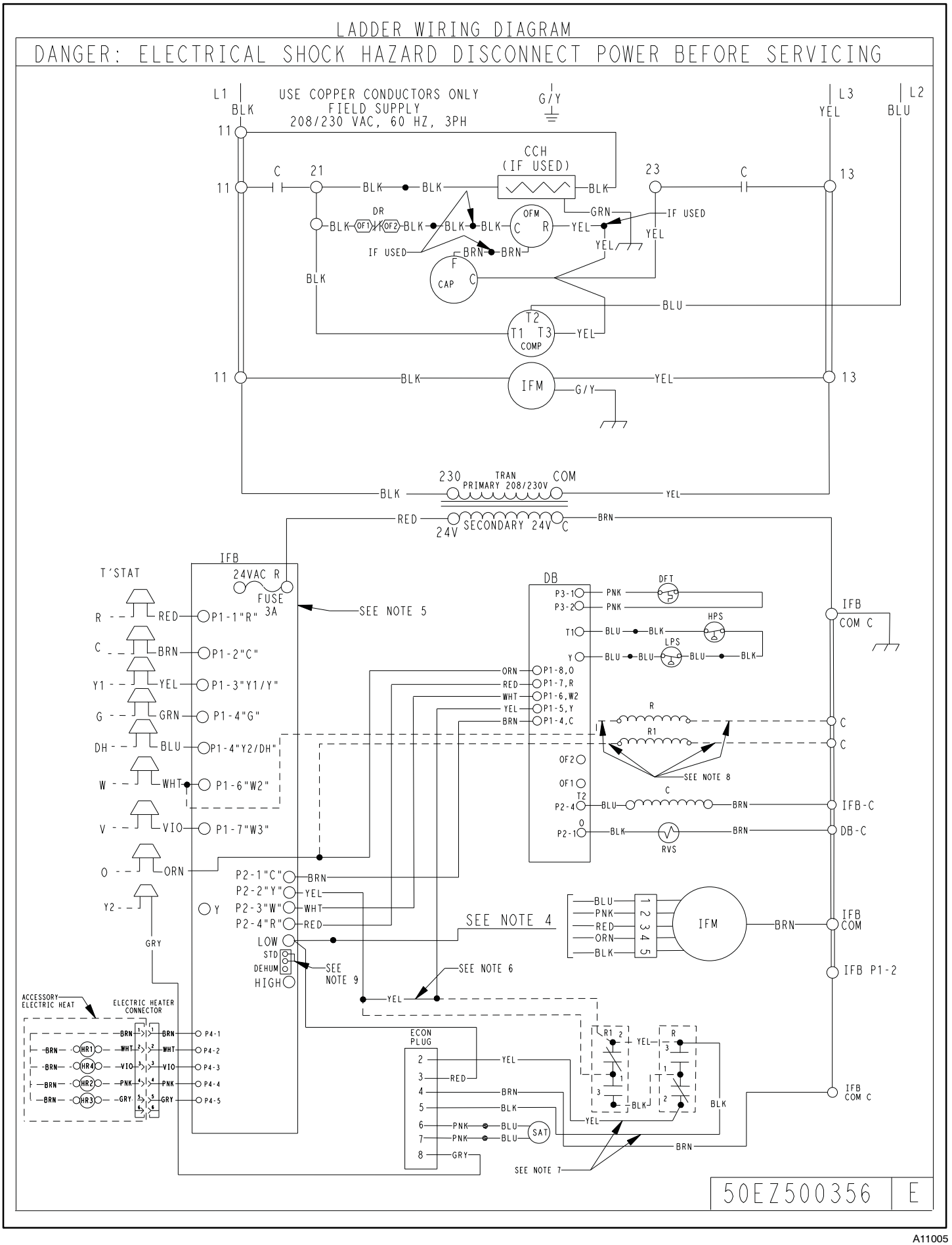
Specifications subject to change without notice.

TYPICAL CONNECTION WIRING SCHEMATIC – 208/230–3–60



A11006

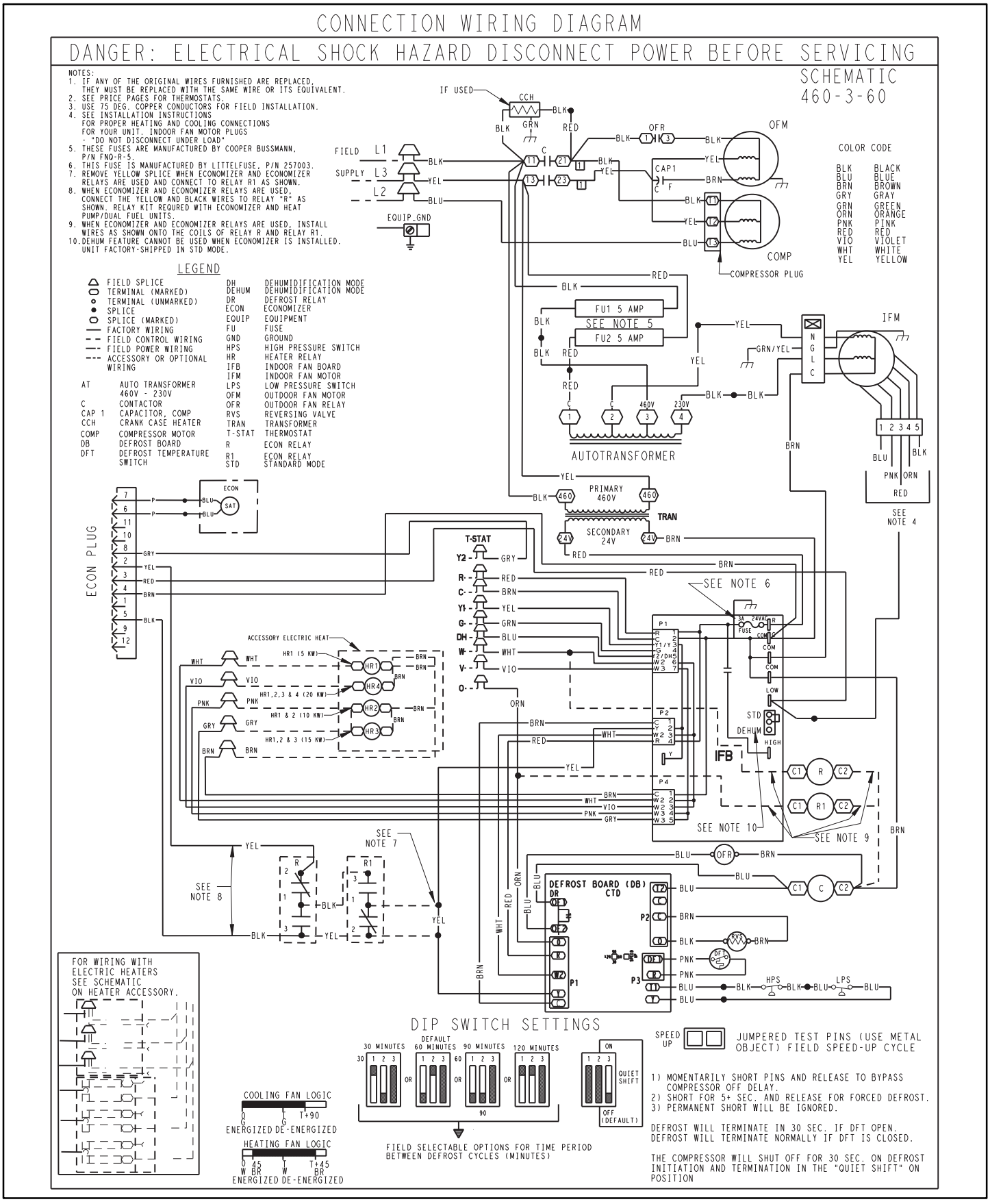
TYPICAL LADDER WIRING SCHEMATIC – 208/230–3–60



A11005

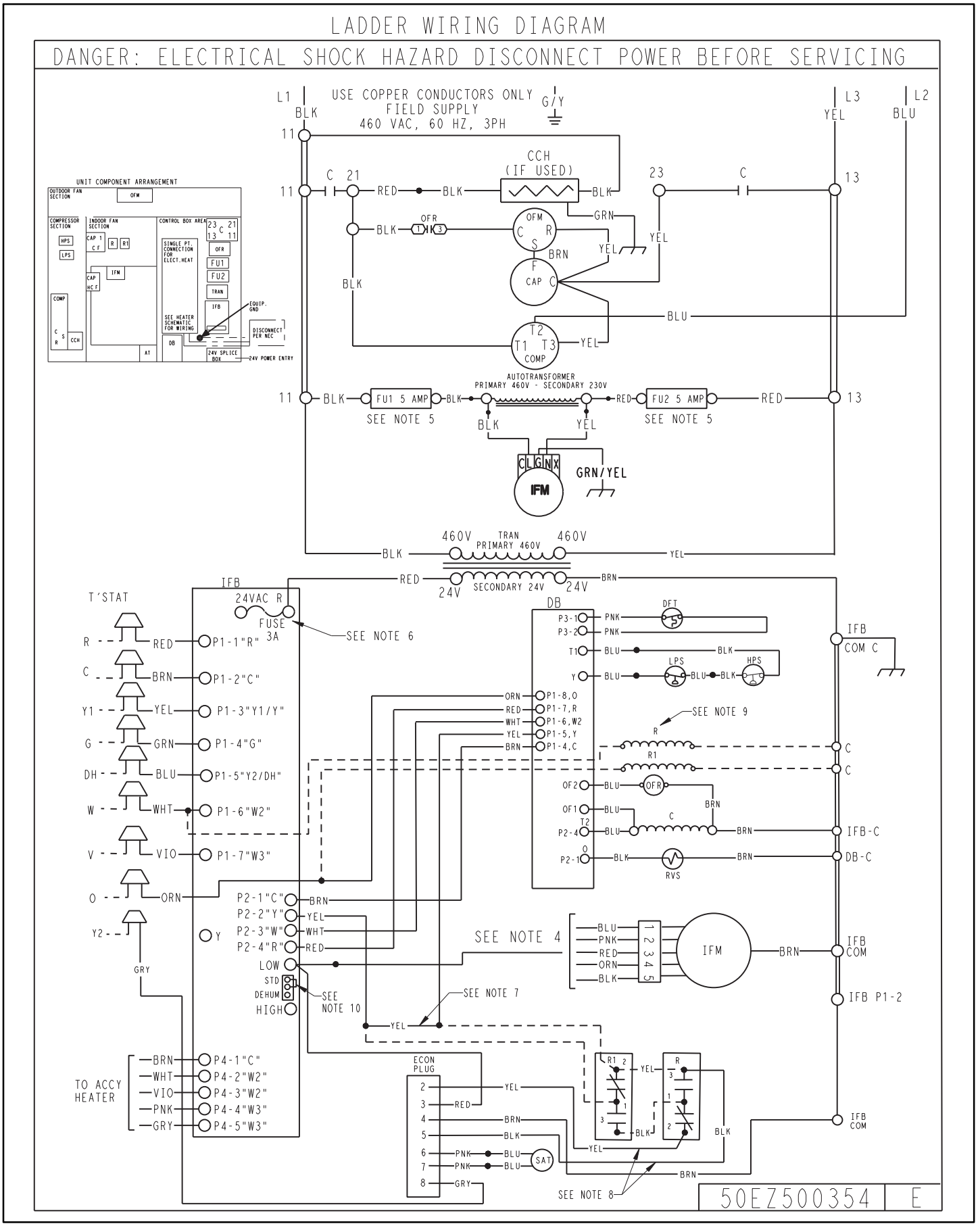
Specifications subject to change without notice.

TYPICAL CONNECTION WIRING SCHEMATIC – 460–3–60



A10195C

TYPICAL LADDER WIRING SCHEMATIC – 460–3–60



A10195L

Specifications subject to change without notice.

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 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 after the preselected time delay.

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 also is completed, energizing IFR and starting IFM after the selected time delay.

Should room temperature continue to fall, circuit R–W is made through second–stage thermostat. If optional electric heat package is used, a relay is energized, bringing on first bank of supplemental electric heat. When thermostat is satisfied, contacts open, deenergizing contactor and relay; motors and heaters deenergize.

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 a bank of optional electric heat turns on to warm air supplying the conditioned space.

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 Heat Pump System

HVAC Guide Specifications

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

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 AHRI 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 3 removable cabinet panels.
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. Tube sheet openings shall be belled to prevent tube wear.

F. Refrigerant Metering Device:
Refrigerant metering device shall be thermostatic 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 90−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.
4. Evaporator fan motor to be ECM Motor.

L. Special Features Available:
1. Coil Options:
   Base unit with tin plated indoor coil hairpins available as a factory installed option.
2. Compressor Start Kit (single phase units only):
   Shall provide additional starting torque for single−phase compressors.
3. Thermostat:
   To provide for two−stage heating and one−stage cooling in addition manual or automatic changeover and indoor fan control.
4. Crankcase Heater:
   Shall provide anti−floodback protection for lowload cooling applications.
5. Economizer:
   (Horizontal − Field installed option)
   (Vertical − Field installed accessory or factory installed option)
   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.
6. Electric Heaters
   a. Electric heater shall be available as a field installed option.
   b. Heater elements shall be open wire type, adequately supported and insulated with ceramic bushings.
   c. Electric heater packages must provide single point power connection capability.
7. Filter Rack Kit:
   Shall provide filter mounting for downflow applications. Offered as an accessory or as a factory installed option.
8. Flat Roof Curb:
   Curbs shall have seal strip and a wood nailer for flashing and shall be installed per manufacturer's instructions.
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 (−17.7°C) outdoor ambient temperature.
10. Manual Outdoor Air Damper:
    Package shall consist of damper, birdscreen, and rainhood which can be preset to admit outdoor air for year−round ventilation.
11. Square−To−Round Duct Transitions (24−48 size):
    Shall have the ability to convert the supply and return openings from rectangular to round.
12. Time Guard II
    Automatically prevents the compressor from restarting for at least 4 minutes and 45 seconds after shutdown of the compressor. Not required when a corporate programmable thermostat is applied or with a RTU−MP control.
13. Dual Point Electric Heaters|
    Allows you to power the electric heater and unit contactor separately by having two individual field power supply circuits connected respectively.

PHD4 ACCESSORIES		
Accessory Model Number	Description	Use With
CURBS		
CPRFCURB010A00	Roof Curb, 11” High	24 – 60
CPRFCURB011A00	Roof Curb, 14” High	24 – 60
CPRFCURB012A00	Roof Curb, 11” High	36 – 60
CPRFCURB013A00	Roof Curb, 14” High	36 – 60
Note: CPRFCURB010A00 AND CPRFCURB011A00 can be used with 42–60 size units with some overhang.		
ADAPTER CURBS*		
CPADCURB001A00	Adapter curb for use with NPRFCURB006A00 & NPRFCURB007A00	24 – 30
CPADCURB002A00	Adapter curb for use with NPRFCURB008A00 & NPRFCURB009A00	36 – 60
* Can also be used when replacing other manufacturer’s older generation units that contain a composite base without a metal base rail.		
CONCENTRIC ADAPTERS – (Use with curb only)		
NPCONADP001A00	For 18” round duct (use with curbs CPRFCURB010A00, CPRFCURB011A00)	Small Curb
NPCONADP002A00	For 18” round duct (use with curbs CPRFCURB012A00, CPRFCURB013A00)	Large Curb
ECONOMIZERS		
CPECOMZR007A00	Dedicated Vertical Economizer – Internal with solid state controller, gear driven, fully modulating damper, spring return actuator, up to 50% barometric relief, supply and dry bulb outdoor air sensors. Includes filter rack with 1” filters*.	24 – 30
CPECOMZR008A00		36 – 42
CPECOMZR009A00		48 – 60
CPECOMZR010A00	Dedicated Horizontal Economizer – Internal with solid state controller, fully modulating damper, spring return actuator, supply and dry bulb outdoor air sensor, and low ambient compressor lockout switch included. Includes filter rack with 1–inch filters*.	24 – 30
CPECOMZR011A00		36 – 42
CPECOMZR012A00		48 – 60
CPRLYKIT001A00	Economizer Relay for Heat Pumps	36 – 60
AXB078ENT	Outdoor Enthalpy Control	ALL
* Outdoor enthalpy available as field installed accessory; Filter rack and 1” filter, same as CPFILTRK kit		
DAMPERS		
CPMANDPR007A00	Manual Outside Air Damper (Includes filter rack and 1” filter, same as CPFILTRK kit)	24 – 30
CPMANDPR008A00		36 – 42
CPMANDPR009A00		48 – 60
INTERNAL FILTER RACKS		
CPFILTRK007A00	Internal Filter Rack (includes 1–inch filters)	24 – 30
CPFILTRK008A00		36 – 42
CPFILTRK009A00		48 – 60
CRANKCASE HEATERS		
NPCRKHTR008A00	240V Crankcase Heater (included on all other sizes)	36
LOW AMBIENT, ANTI–CYCLE TIMER, COMPRESSOR START ASSIST		
CPLOWAMB001A00	Low Ambient Control – enables cooling system to operate down to 0 Deg. F by cycling condenser fan on and off.	ALL
NRTIMEGD001A00	Five Minute Compressor Delay	ALL
CPHSTART002A00	PTC Compressor Start Assist Kit (All single phase)	ALL
HAIL GUARDS / COIL PROTECTION (Factory installed on PHD4000KTP models)**		
NAPA00701GR	3/8” spacing dense wire grilles	24 – 30
NAPA00601GR	3/8” spacing dense wire grilles	36
NAPA01001GR	3/8” spacing dense wire grilles	42 – 48
NAPA01301GR	3/8” spacing dense wire grilles	60
DUCT TRANSITIONS		
NPDUCFLG002A00	Square to Round (1 set of 2, use with horizontal duct flanges only)	24 – 48

PHD4 ACCESSORIES (CONT.)				
ELECTRIC HEATERS	**Voltage / Nominal Capacity kW / Fuses**			
PART NO.	**NOMINAL CAPACITY (kW)**	**FUSED**	**STAGES**	**USED WITH**
208/230V – 1 PHASE – 60 HZ				
CPHEATER052A0*	3.8 / 5.0	NO	1	24 – 36
CPHEATER064A0*	3.8 / 5.0	YES	1	ALL
CPHEATER070A0*	5.4 / 7.2	YES	2	ALL
CPHEATER050A0*	7.5 / 10.0	YES	2	ALL
CPHEATER066A0*	11.3 / 15.0	YES	2	30 – 60
CPHEATER054A0*	15.0 / 20.0	YES	2	42 – 60
208/230V – 3 PHASE – 60 HZ				
CPHEATER055A0*	3.8 / 5.0	NO	2	30 – 60
CPHEATER056A0*	7.5 / 10.0	NO	2	30 – 42
CPHEATER068A0*	7.5 / 10.0	YES	2	30 – 60
CPHEATER058A0*	11.3 / 15.0	YES	2	30 – 60
CPHEATER059A0*	15.0 / 20.0	YES	2	42 – 60
460V – 3 PHASE – 60 HZ				
CPHEATER061A0*	10.0	NO	2	36 – 60
CPHEATER062A0*	15.0	NO	2	36 – 60
CPHEATER063A0*	20.0	NO	2	42 – 60

***** Denotes digit can be 0, 1, or 2

NOTE: If installing an accessory heater, the thermostat must have capability to energize “G” (fan) on a call for “W” (electric heat). TSTAT0406 and TSTAT0408 contain this feature.

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Specifications subject to change without notice.