

COMMERCIAL SPLIT SYSTEMS CONDENSING UNITS R-410A, 6 to 20 TONS

BUILT TO LAST, EASY TO INSTALL AND SERVICE

- Single stage cooling capacity control on all 072 to 241 models
Two stage cooling capacity control on 120 to 240 models
- Round copper tube aluminum plate fin (RTPF) condenser coils on all models
- Brass suction and liquid line service valves
- Full perimeter base rail with built-in rigging adapters and fork truck slots
- Galvanized steel cabinet with pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- Fully hermetic scroll compressors with crankcase heater
- Compressors mounted on independent vibration isolators
- Comfort Alert™ Diagnostic Board
LED Go-No-Go and fault code
Built in time guard anti-short cycle
Phase protection
Fault code retention logic
Low volt compressor contactor protector
- All units have high and low pressure switches
- Direct drive permanently lubricated condenser fan motors
- Newly designed terminal board facilitates simple safety circuit troubleshooting and simplified control box arrangement
- Outdoor temperature cooling operation range up to 125°F (52°C) and down to 40°F (4°C)
- Models with optional low ambient control provide cooling operation down to -20°F (-29°C)
- All units factory run tested



WARRANTY

- 5 Year compressor limited warranty
- 1 Year parts limited warranty



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.ahrirectory.org.



UNIT PERFORMANCE DATA ¹ – Single Circuit						
Model Number	COOLING			Total Power (KW)	Unit Dimensions H x W x L Inches [mm]	Ship Weight lb. / kg
	Nominal Capacity Ton	Net Capacity BTUH	E.E.R			
CAS072*AA0A00A	6	71,000	11.5	6.2	42-3/8 x 59-3/8 x 45-7/8 [1077 x 1508 x 1164]	389 / 176
CAS091*AA0A00A	7.5	92,000	11.2	8.2	42-3/8 x 59-3/8 x 45-7/8 [1077 x 1508 x 1164]	391 / 177
CAS121*AA0A00A	10	117,000	11.2	10.4	50-3/8 x 59-3/8 x 45-7/8 [1279 x 1507 x 1164]	490 / 222
CAS151*AA0A00A	12.5	148,000	11.0	13.5	50-3/8 x 59-3/8 x 45-7/8 [1279 x 1507 x 1164]	598 / 271
CAS181*AA0A00A	15	184,000	11.2	16.4	50-3/8 x 86-3/8 x 45-1/8 [1279 x 2193 x 1148]	731 / 322
CAS241*AA0A00A	20	240,000	11.0	21.8	50-3/8 x 86-3/8 x 67-1/8 [1279 x 2193 x 1704]	978 / 444
UNIT PERFORMANCE DATA ¹ – Dual Circuit						
CAS120*DA0A00A	10	117,000	11.2	10.4	50-3/8 x 59-3/8 x 45-7/8 [1279 x 1507 x 1164]	516 / 234
CAS150*DA0A00A	12.5	148,000	11.0	13.5	50-3/8 x 59-3/8 x 45-7/8 [1279 x 1507 x 1164]	654 / 297
CAS180*DA0A00A	15	184,000	11.2	16.4	50-3/8 x 86-3/8 x 45-1/8 [1279 x 2193 x 1148]	731 / 322
CAS240*DA0A00A	20	240,000	11.0	21.8	50-3/8 x 86-3/8 x 67-1/8 [1279 x 2193 x 1704]	978 / 444

* - Indicates Unit voltage: H = 208/230-3-60, L = 460-3-60, S = 575-3-60

¹ - Above ratings are with matching size air handling unit

MODEL NOMENCLATURE

MODEL SERIES	C	A	S	0	9	1	H	A	A	0	A	0	0	A
Position Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
C = R-410A Condensing Unit														
A = Air Conditioning (Cooling Only)														
H = Heat Pump														
Type														
S = Standard ASHRAE 90.1-2010 Efficiency														
Efficiency														
072 = 71,000 BTUH = 6 Tons														
091 = 92,000 BTUH = 7.5 Tons (1 circuit)														
120 = 117,000 BTUH = 10 Tons (2 circuit)														
121 = 117,000 BTUH = 10 Tons (1 circuit)														
150 = 148,000 BTUH = 12.5 Tons (2 circuit)														
151 = 148,000 BTUH = 12.5 Tons (1 circuit)														
180 = 180,000 BTUH = 15 Tons (2 circuit)														
181 = 180,000 BTUH = 15 Tons (1 circuit)														
240 = 240,000 BTUH = 20 Tons (2 circuit)														
241 = 240,000 BTUH = 20 Tons (1 circuit)														
Nominal Cooling Capacity														
H = 208/230-3-60														
L = 460-3-60														
S = 575-3-60														
Voltage														
A = Single Circuit														
B = Single Circuit w/ Low Ambient Control														
D = Dual Circuit														
E = Dual Circuit w/ Low Ambient Control														
Refrigerant System Options														
A = Cu/Al Cond. RTPF														
B = Precoat Al/Cu Cond. RTPF														
C = E-Coat Al/Cu Cond. RTPF														
E = Cu/Cu Cond. RTPF														
Outdoor Coil Options														
0 = None														
1 = Non-powered 115v Convenience Outlet														
Service Options														
A = None														
C = Non-Fused Disconnect Switch														
Electrical Options														
0 = Standard Elec-Mechanical Control														
Base Unit Controls														
0 = No options, reserved for future Use														
Future Use														
A = Original Design														
Sales Digit														

Table 1 – CAS FACTORY INSTALLED OPTIONS AND FIELD INSTALLED ACCESSORIES

ITEM	FACTORY INSTALLED OPTION	FIELD INSTALLED ACCESSORY
Disconnect Switch (non-fused)	X	
E-coated Coil Protection	X	
Non-powered Convenience Outlet (115-v)	X	
Low Ambient temperature head pressure controller	X	X
Louvered Hail Guard		X

Coil Coating Application – Round Tube/Plate Fin Coils

Description	Environment					
	Standard Non-Corrosive	Mild Coastal	Moderate Coastal	Severe Coastal	Industrial	Industrial & Coastal
Alum Fin / Cu Tube	X					
Pre-Coated Al / Cu		X				
E-Coated Al / Cu					X	X
Cu / Cu			X	X		

NOTE: Refer to the Guide Specifications for further detail.

CAS factory-installed options

E-coated aluminum-fin coils have a flexible and durable epoxy coating uniformly applied to all coil surfaces. E-coating provides superior protection with unmatched flexibility, edge coverage, metal adhesion, thermal performance, and most importantly, corrosion resistance.

E-coated coils provide this protection since all coil surfaces are completely encapsulated from environmental contamination. This coating is especially suitable in industrial environments.

Pre-coated coils provide protection in mild coastal environments.

-20°F low-ambient temperature kit option (Motormaster®) controls outdoor-fan motor operation to maintain the correct head pressure at low outdoor ambient temperatures.

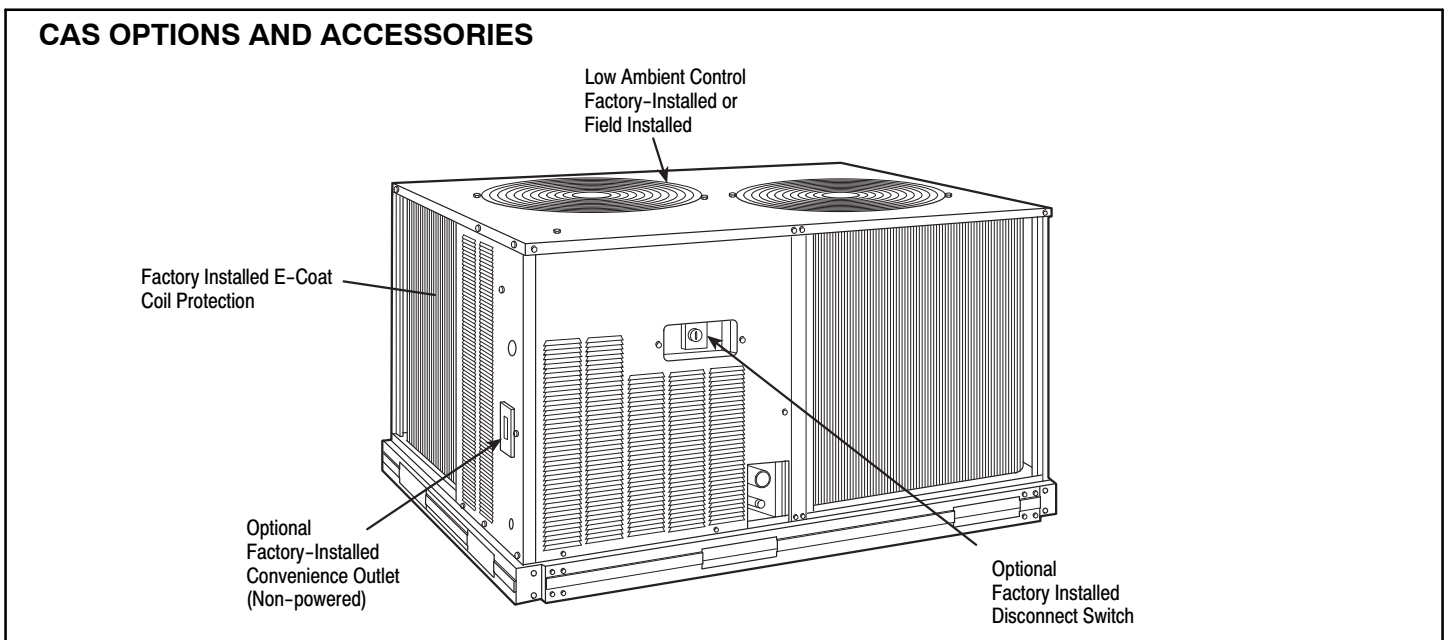
115-v non-powered convenience outlet is used to power electric drills, lights, and refrigerant recovery machines.

Non-fused disconnect switch is used to remove power locally at the condensing unit. This switch also includes a power lockout capability to protect the service person.

CAS field-installed accessories

-20°F low-ambient temperature kit accessory (MotorMaster I) controls outdoor-fan motor operation to maintain the correct head pressure at low outdoor ambient temperatures.

Louvered hail guard package protects coils against damage from flying debris and hail.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ACCESSORIES – CAS

LOW AMBIENT CONTROLS		
Model Number	Description	Use With Model Size
CALOWAMB030A00	Low Ambient Temperature Head Pressure Controller, allows cooling operation down to -20°F by varying the speed on the condenser fan.	072, 091, 121, 151, 120, 150 (208/230-3-60v only)
CALOWAMB031A00		072, 091 (460-3-60v only)
CALOWAMB032A00		121, 151, 120, 150 (460-3-60v only)
CALOWAMB033A00		072, 091, 121, 151 (575-3-60v only)
CALOWAMB037A00		181 (208/230-3-60v only)
CALOWAMB038A00		181 (460-3-60v only)
CALOWAMB039A00		181 (575-3-60v only)
CALOWAMB018A00		241 (208/230-3-60v only)
CALOWAMB019A00		241 (460-3-60v only)
CALOWAMB020A00		241 (575-3-60v only)
CALOWAMB036A00		120, 150 (208/230-3-60v only)
CALOWAMB040A00		180 (208/230-3-60v only)
CALOWAMB041A00		180 (460-3-60v only)
CALOWAMB042A00		180 (575-3-60v only)
CALOWAMB021A00		240 (208/230-3-60v only)
CALOWAMB022A00		240 (460-3-60v only)
CALOWAMB023A00		240 (575-3-60v only)

LOUVERED HAIL GUARDS – CONDENSER COIL		
Model Number	Description	Use With Model Size
CALVHLGD005A00	Louvered Condenser Coil Hail Guard – Includes louvered panel(s) to protect condenser coil from damage and vandalism	072
CALVHLGD006A00		090, 091
CALVHLGD011A00		120, 121
CALVHLGD012A00		150, 151
CALVHLGD008A00		180, 181
CALVHLGD009A00		240, 241

LIQUID LINE SOLENOID VALVES (LLSV) †		
Model Number**	Description	Use With Model Size
1179871	Liquid Line Solenoid Valve	3/8" L ‡
1179872	Liquid Line Solenoid Valve	1/2" L
1179873	Liquid Line Solenoid Valve	5/8" L
1179874	Solenoid Coil	ALL

SIGHT GLASSES		
Model Number**	Description	Use With Liquid Line Size
1179879	Sight Glass	3/8" L
1179877	Sight Glass	1/2 in. L
1179878	Sight Glass	5/8 in. L

Refer to the Application Data section for refrigerant pipe sizing. A sight glass is recommended for all commercial split systems.

† LLSV must be installed at the INDOOR unit

‡ Bushing required

L – Liquid line

S – Suction Line

** Available from FAST Parts

Table 2 – AHRI* CAPACITY RATINGS

PERFORMANCE DATA COOLING – Single Circuit						
UNIT	COOLING CIRCUITS	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (BTUH)	TOTAL POWER (KW)	EER	IEER
CAS072	1	6	71,000	6.2	11.5	12.2
CAS091	1	7.5	92,000	8.2	11.2	11.8
CAS121	1	10	117,000	10.4	11.2	12.0
CAS151	1	12.5	148,000	13.5	11.0	12.0
CAS181	1	15	184,000	16.4	11.2	13.2
CAS241	1	20	240,000	21.8	11.0	11.2
PERFORMANCE DATA COOLING – Dual Circuit						
CAS120	2	10	117,000	10.4	11.2	11.6
CAS150	2	12.5	148,000	13.5	11.0	12.0
CAS180	2	15	184,000	16.4	11.2	11.8
CAS240	2	20	240,000	21.8	11.0	11.2

* Above ratings are with matching size air handling unit.

LEGEND

- AHRI – Air-Conditioning, Heating and Refrigeration Institute
- ASHRAE – American Society of Heating, Refrigerating and Air Conditioning, Inc.
- EER – Energy Efficiency Ratio
- IEER – Integrated Energy Efficiency Ratio

NOTES

1. Rated in accordance with AHRI Standard 340/360-07, as appropriate.
2. Ratings are based on:
Cooling Standard: 27°C (80°F) db, 19°C (67°F) wb indoor air temp and 35°C (95°F) db outdoor air temp.
IEER Standard: 27°C (80°F) db, 19°C (67°F) wb indoor air temp and 4 various outdoor temperatures.
3. All units comply with ASHRAE 90.1 Energy Standard for minimum EER and IEER requirements.



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Table 3 – SOUND LEVELS

SOUND POWER LEVELS, dB										
UNIT CAS	COOLING STAGES	OUTDOOR SOUND (dB)								
		A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
072	1	85	89.3	85.0	82.0	82.7	80.2	75.2	71.0	66.0
091	1	85	89.3	85.0	82.0	82.7	80.2	75.2	71.0	66.0
121	1	83	86.6	81.9	85.7	80.0	77.1	74.6	69.2	65.8
120	2	84	86.3	85.8	81.4	81.9	79.5	75.1	71.9	68.9
151	1	84	89.1	85.7	83.0	81.1	79.3	74.9	69.7	62.2
150	2	83	81.7	80.9	82.2	80.4	78.2	73.6	69.7	65.4
181	2	83	86.7	81.2	78.9	80.4	78.0	74.2	70.2	65.0
180	2	83	86.7	81.2	78.9	80.4	78.0	74.2	70.2	65.0
241	2	85	91.0	85.0	80.0	86.0	79.0	73.0	68.0	63.0
240	2	85	91.0	85.0	80.0	86.0	79.0	73.0	68.0	63.0

LEGEND

dB = Decibel

Table 4 – PHYSICAL DATA

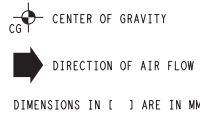
PHYSICAL DATA – CAS						
	072	091	121	151	181	241
Refrigeration System						
# Circuits / # Comp. / Type	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll	1 / 2 / Scroll	1 / 2 / Scroll
R-410a charge A/B (lbs)	11.0	13.0	16.0	32.0	32.0	28.0
System charge w/ fan coil*	14.0	17.0	20.0	N/A	43.0	38.0
Metering device	TXV	TXV	TXV	TXV	TXV	TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117	54 / 117	54 / 117	54 / 117
Cond. Coil						
Material (Fin/Tube)	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu
Coil type	RTPF	RTPF	RTPF	RTPF	RTPF	RTPF
Rows / FPI	2 / 17	2 / 17	2 / 17	3 / 17	2 / 17	2 / 17
Total face area (ft2)	17.5	17.5	25.1	31.8	23.5 x 2	25.0 x 2
Cond. fan / motor						
Qty / Motor drive type	2 / direct	2 / direct	2 / direct	2 / direct	3 / direct	4 / direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22	22	22	22	22
Nominal Airflow (cfm)	6,000	6,000	6,000	6,000	9,000	12,000
Watts (total)	610	610	610	610	970	1150

PHYSICAL DATA – CAS (Cont.)				
	120	150	180	240
Refrigeration System				
# Circuits / # Comp. / Type	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll
R-410a charge A/B (lbs)	8.0 / 8.0	16.0 / 16.0	16.0 / 16.0	14.0 / 14.0
System charge w/ fan coil*	11.0 / 11.0	22.0 / 22.0	22.0 / 22.0	19.0 / 19.0
Metering device	TXV	TXV	TXV	TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117	54 / 117
Cond. Coil				
Material (Fin/Tube)	Al/Cu	Al/Cu	Al/Cu	Al/Cu
Coil type	RTPF	RTPF	RTPF	RTPF
Rows / FPI	2 / 17	3 / 17	2 / 17	2 / 17
total face area (ft2)	25.1	31.8	23.5 x 2	25.0 x 2
Cond. fan / motor				
Qty / Motor drive type	2 / direct	2 / direct	3 / direct	4 / direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22	22	22
Nominal Airflow (cfm)	6,000	6,000	9,000	12,000
Watts (total)	610	610	970	1150

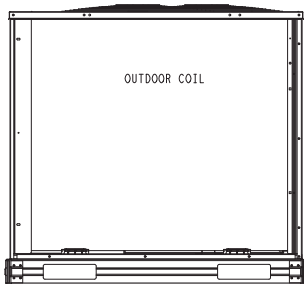
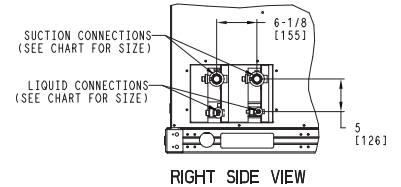
* Approximate system charge with about 25 ft piping of sizes indicated with matched FAS.

Table 5 – DIMENSIONS AND WEIGHTS, 6 to 12.5 TON

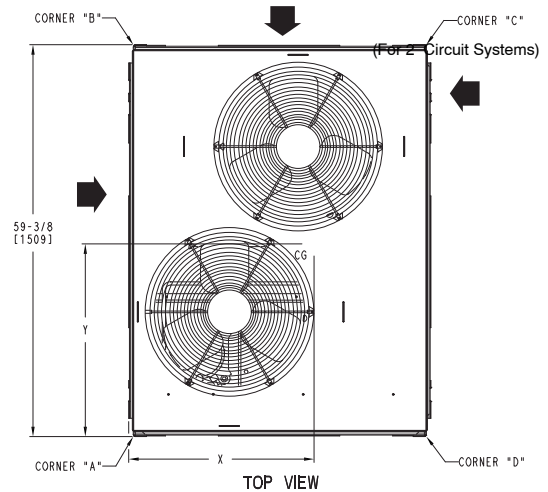
UNIT	BASE UNIT WEIGHT		Corner Weight A		Corner Weight B		Corner Weight C		Corner Weight D		Center of Gravity In [mm]			UNIT HEIGHT
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	X	Y	Z	
CAS072	389	176	141	64	96	44	62	28	91	41	18 [457]	24 [610]	21 [533]	42-3/8 [1076]
CAS091	391	177	142	64	96	44	62	28	91	41	18 [457]	24 [610]	21 [533]	42-3/8 [1076]
CAS121	490	222	177	80	120	54	78	35	114	52	18 [457]	24 [610]	24 [610]	50-3/8 [1279]
CAS151	598	271	195	88	142	64	110	50	151	68	20 [508]	25 [635]	24 [610]	50-3/8 [1279]
CAS120	516	234	185	84	117	53	83	38	131	59	19 [483]	23 [584]	24 [610]	50-3/8 [1279]
CAS150	654	297	214	97	155	70	120	54	165	75	20 [508]	25 [635]	24 [610]	50-3/8 [1279]



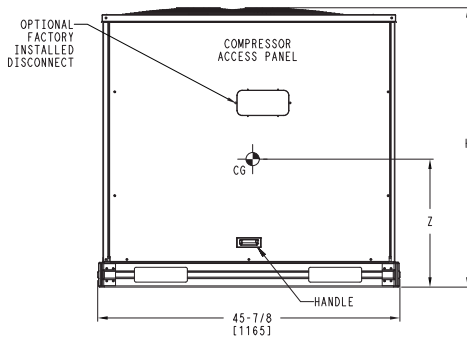
UNIT	SERVICE VALVE CONNECTIONS	
	SUCTION	LIQUID
CAS072	1-1/8 [28.6]	3/8 [9.5]
CAS091	1-1/8 [28.6]	1/2 [12.7]
CAS121	1-3/8 [34.9]	1/2 [12.7]
CAS151	1-3/8 [34.9]	5/8 [15.9]
CAS120	1-1/8 [28.6]	3/8 [9.5]
CAS150	1-3/8 [34.9]	1/2 [12.7]



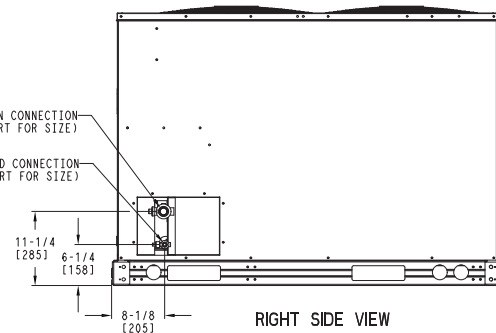
PFAF VIEW



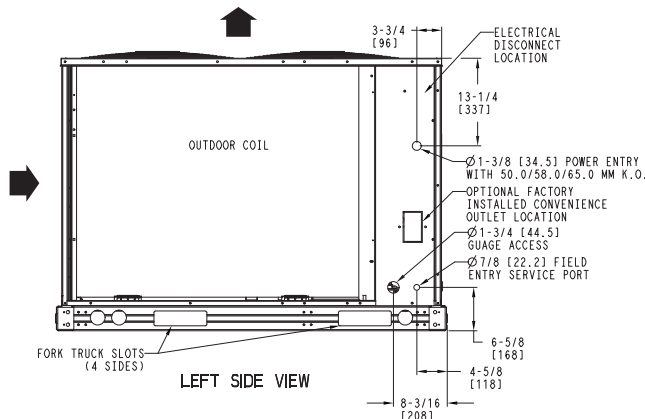
TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW



LEFT SIDE VIEW

NOTES:

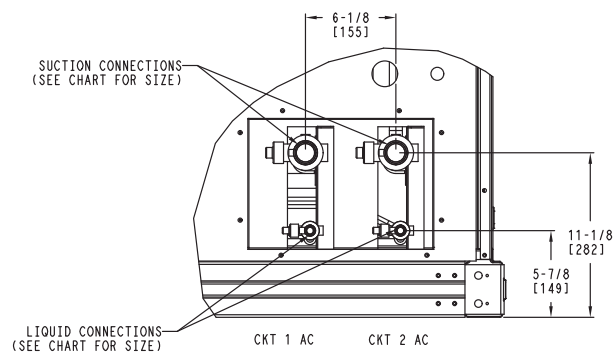
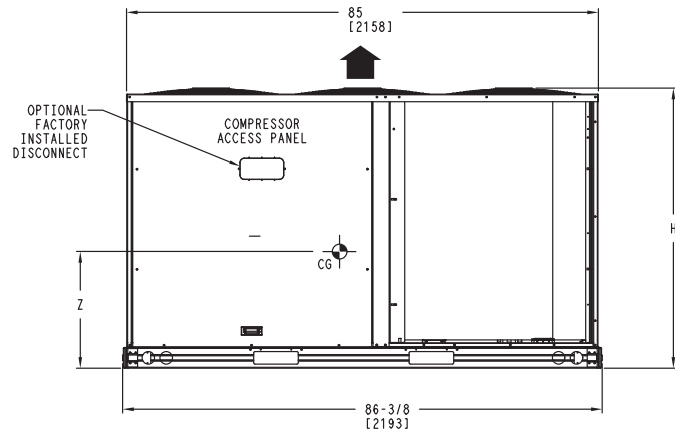
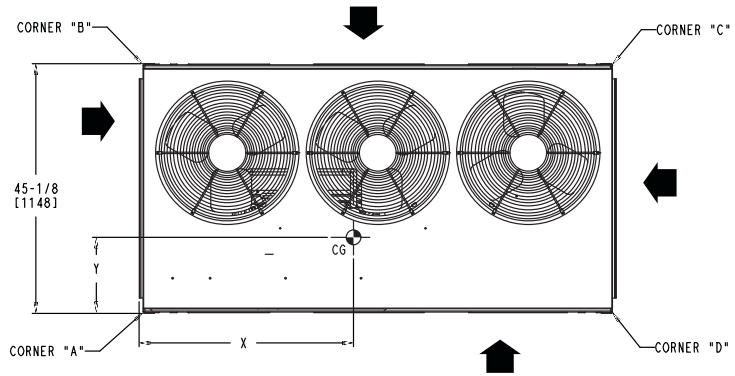
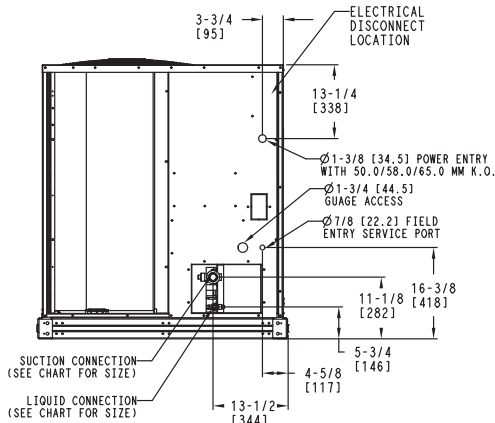
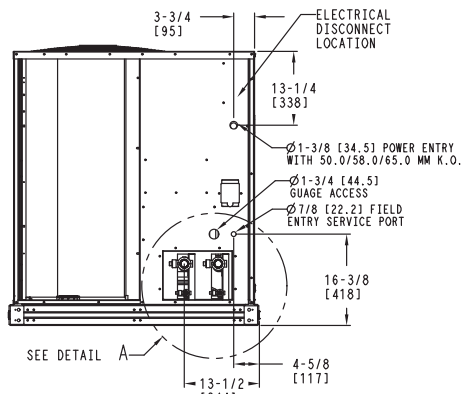
- MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
 - BOTTOM TO COMBUSTIBLE SURFACES: 0 INCHES.
 - OUTDOOR COIL, FOR PROPER AIR FLOW: 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
 - OVERHEAD: 60 INCHES, TO ASSURE PROPER OUTDOOR FAN OPERATION.
 - BETWEEN UNITS: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - BETWEEN UNIT AND UNGROUNDED SURFACES: CONTROL BOX SIDE, 36 INCHES PER NEC.
 - BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES: CONTROL BOX SIDE, 42 INCHES PER NEC.
- WITH EXCEPTION OF THE CLEARANCE FOR THE OUTDOOR COIL AS STATED IN NOTE 1B, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
- UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B OR C ROOF COVERING MATERIAL.

C101209A

Table 6 – DIMENSIONS AND WEIGHTS, 15 TON

UNIT	BASE UNIT WEIGHT		Corner Weight A		Corner Weight B		Corner Weight C		Corner Weight D		Center of Gravity In [mm]			UNIT HEIGHT
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	X	Y	Z	
CAS181	731	332	237	107	172	78	135	61	186	84	38 [965]	19[483]	15-1/8 [384]	50-3/8 [1279]
CAS180	731	332	237	107	172	78	135	61	186	84	38 [965]	19[483]	15-1/8 [384]	50-3/8 [1279]

UNIT	SERVICE VALVE CONNECTIONS		QTY
	SUCTION	LIQUID	
CAS181	1-3/8 [34.9]	5/8 [15.9]	1
CAS180	1-3/8 [34.9]	1/2 [12.7]	2



CG 1 CENTER OF GRAVITY

➔ DIRECTION OF AIR FLOW

DIMENSIONS IN [] ARE IN MM

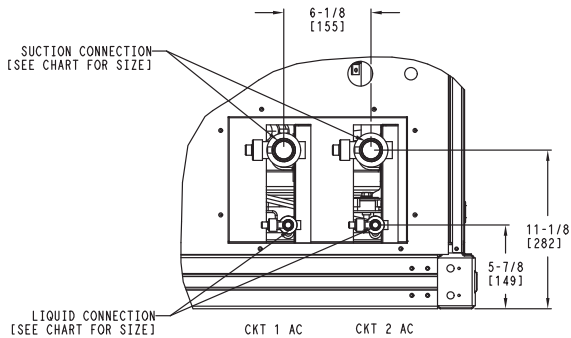
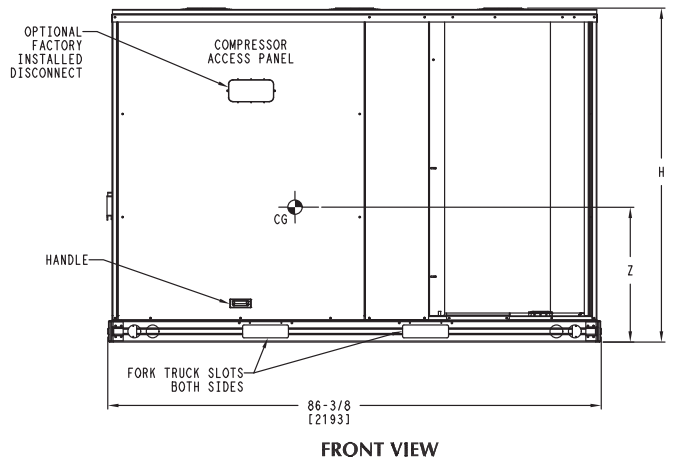
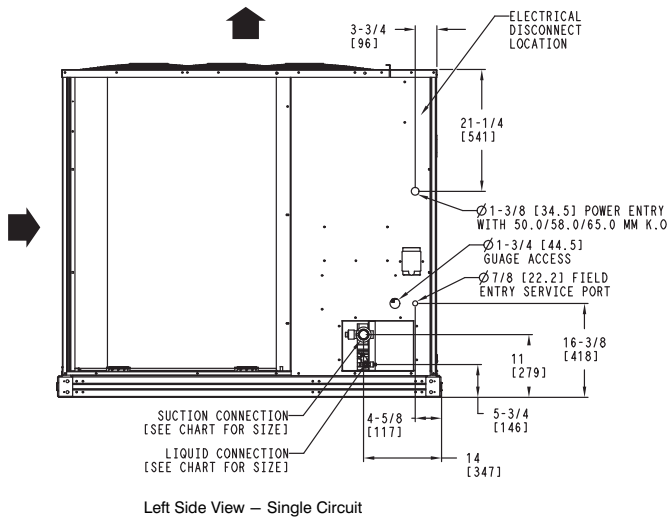
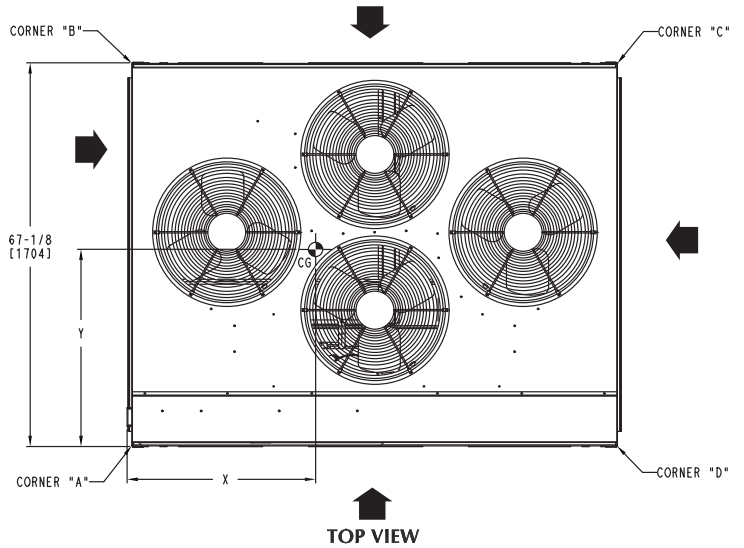
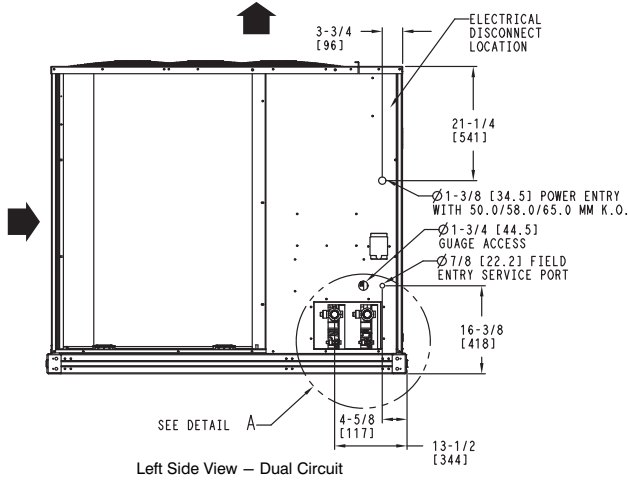
- NOTES:
- MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
 - BOTTOM TO COMBUSTIBLE SURFACES: 0 INCHES.
 - OUTDOOR COIL, FOR PROPER AIR FLOW: 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
 - OVERHEAD: 60 INCHES, TO ASSURE PROPER OUTDOOR FAN OPERATION.
 - BETWEEN UNITS: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - BETWEEN UNIT AND UNGROUNDED SURFACES: CONTROL BOX SIDE, 36 INCHES PER NEC.
 - BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - WITH EXCEPTION OF THE CLEARANCE FOR THE OUTDOOR COIL AS STATED IN NOTE 1B, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
 - UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B OR C ROOF COVERING MATERIAL.

C101210

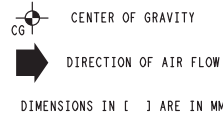
Table 7 – DIMENSIONS AND WEIGHTS, 20 TON

UNIT	BASE UNIT WEIGHT		Corner Weight A		Corner Weight B		Corner Weight C		Corner Weight D		Center of Gravity In [mm]			UNIT HEIGHT
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	X	Y	Z	
CAS241	978	444	360	133	188	85	147	67	283	128	38 [965]	23 [584]	17 [439]	50-3/8 [1279.2]
CAS240	978	444	360	133	188	85	147	67	283	128	38 [965]	23 [584]	17 [439]	50-3/8 [1279.2]

UNIT	SERVICE VALVE CONNECTIONS		
	SUCTION	LIQUID	QTY
CAS241	1-5/8 [41.3]	5/8 [15.9]	1
CAS240	1-5/8 [41.3]	1/2 [12.7]	2



- NOTES:**
- MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
 - A. BOTTOM TO COMBUSTIBLE SURFACES: 0 INCHES.
 - B. OUTDOOR COIL, FOR PROPER AIR FLOW: 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
 - C. OVERHEAD: 60 INCHES, TO ASSURE PROPER OUTDOOR FAN OPERATION.
 - D. BETWEEN UNITS: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - E. BETWEEN UNIT AND UNGROUNDED SURFACES: CONTROL BOX SIDE - 36 INCHES PER NEC.
 - F. BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - WITH EXCEPTION OF THE CLEARANCE FOR THE OUTDOOR COIL AS STATED IN NOTE 1B, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
 - UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B OR C ROOF COVERING MATERIAL.



C101211

SELECTION PROCEDURE

Combination ratings for CAS units matched with FAS Series air handlers are in this book.

I. Determine cooling load, evaporator-air temperature, and quantity.

Given:

Total Cooling Capacity Required (TC)	121,000 Btuh
Sensible Heat Capacity Required (SHC)	95,000 Btuh
Compressor Type	Scroll
Temperature Air Entering Condenser (Edb)	95°F
Temperature Air Entering Evaporator (db/wb)	80°F db, 67°F wb
Evaporator Air Quantity	4,000 cfm
External Static Pressure	0.4 in. wg
Length of Interconnecting Refrigerant Piping	25 ft (Linear)
Power Supply (V-Ph-Hz)	208/230-3-60

II. Select condensing unit air-handler combination.

For this example, select a CAS121 matched with a FAS120 coil. This CAS121/FAS120 condensing unit air-handler combination provides 122,000 Btuh of total cooling capacity and 97,200 Btuh of sensible capacity at the given conditions. If other temperatures or airflow values are required, interpolate the values from the combination ratings.

III. Determine sizes of liquid and suction lines.

Enter Refrigerant Piping Sizes table. The sizes shown are based on an equivalent length of pipe. This equivalent length is equal to the linear length of pipe indicated at the top of each sizing column, plus a 50% allowance for fitting losses. For this example, note in the linear length column that the proper pipe size is 1/2 in. for the liquid line and 1 3/8 in. for the suction line.

IV. Determine fan rpm and bhp (brake horsepower).

Refer to the FAS Air Handler – Fan Performance table. Enter the Air Handler Fan Performance table at FAS120 at 4000 cfm and move to the External Static Pressure (ESP) column. Note that the conditions require 803 rpm at 1.77 bhp.

V. Determine motor and drive.

Enter the Fan Motor Data tables and find the standard motor for FAS120 unit rated at 2.4 Hp. Since the bhp required is 1.77, a standard motor satisfies the requirement and should be used.

Next, find the type of drive that satisfies the 803 rpm requirement in the Drive Data tables. For the FAS120 unit, the Standard Drive table shows an rpm range of 666-863. Since the rpm required is 803, the standard drive satisfies the requirement and should be used.

CONTROLS

Operating sequences

CAS (All Units)

When the wall thermostat calls for cooling, terminals G and Y1 are energized. As a result, the indoor fan contactor (IFC) and the compressor contactor (C1) are energized, causing the indoor fan motor (IFM), compressor #1, and outdoor fans (OFM) to start. The field-supplied and field-installed liquid line valve also opens, allowing the system to function in Cooling mode.

If the unit has 2 stages of cooling, the wall thermostat will additionally energize Y2. The Y2 signal will energize compressor contactor #2 (C2), causing compressor #2 to start.

Regardless of the number of stages, the field-supplied liquid line valve shall opens and the outdoor fan motors(OFM) runs continuously while unit is cooling.

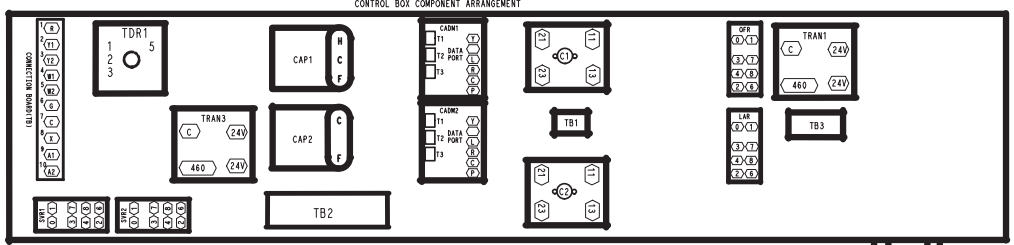
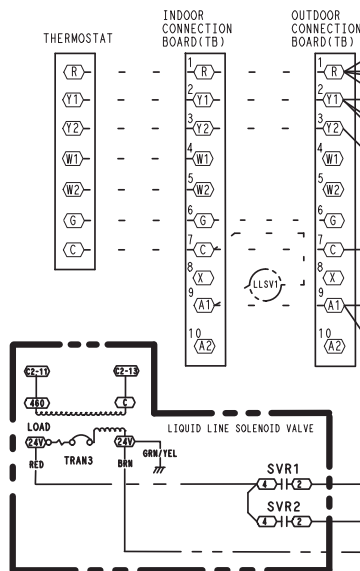
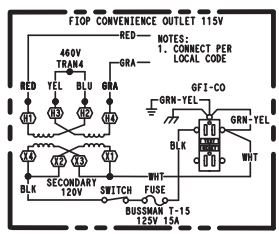
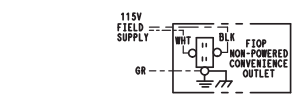
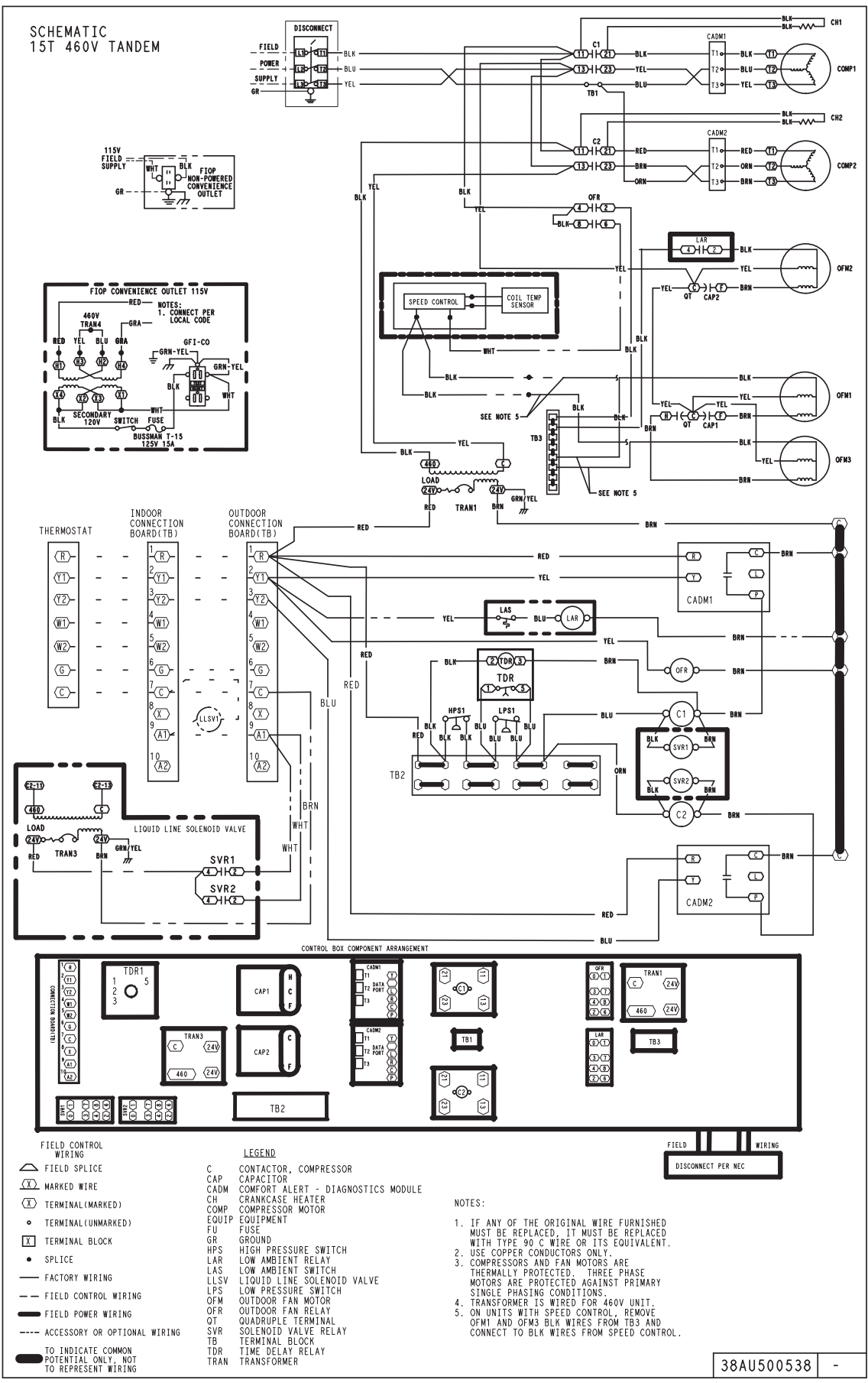
When cooling demand decrease, the thermostat will de-energize Y2. Y2 signal will de-energize compressor contactor #2 (C2), causing compressor #2 to stop.

When cooling demand has been satisfied, the thermostat will de-energize Y1, and G terminals. Y1 and G signal will de-energize compressor contactor #1 (C1), causing compressor #1 to stop. If the wall thermostat is set to continuous (CONT), the indoor fan motor will continue to operate. Otherwise, the indoor fan motor will stop.

The outdoor fan motors (OFM) will turn off and field-supplied liquid line valve shall close, minimizing the potential for refrigerant migration.

TYPICAL CONTROL WIRING - CAS181 SHOWN (460V. SINGLE CIRCUIT)

SCHEMATIC
15T 460V TANDEM



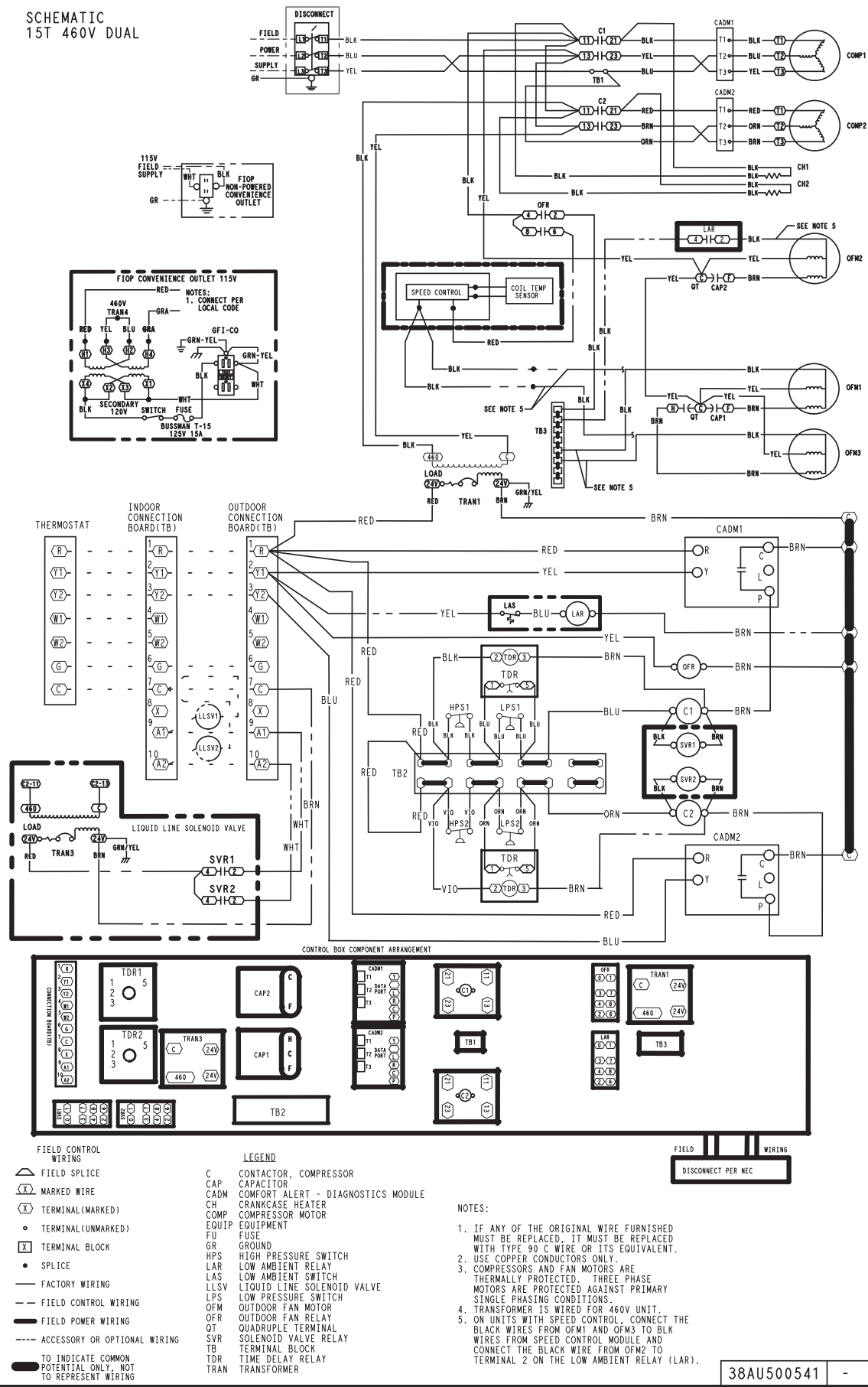
- | | |
|--|--|
| <p>FIELD CONTROL WIRING</p> <ul style="list-style-type: none"> FIELD SPLICE MARKED WIRE TERMINAL (MARKED) TERMINAL (UNMARKED) TERMINAL BLOCK SPLICE FACTORY WIRING FIELD CONTROL WIRING FIELD POWER WIRING ACCESSORY OR OPTIONAL WIRING TO INDICATE COMMON POTENTIAL ONLY NOT TO REPRESENT WIRING | <p>LEGEND</p> <ul style="list-style-type: none"> C CONTACTOR, COMPRESSOR CAP CAPACITOR CADM COMFORT ALERT - DIAGNOSTICS MODULE CH CRANKCASE HEATER COMP COMPRESSOR MOTOR EQUIP EQUIPMENT FU FUSE GR GROUND HPS HIGH PRESSURE SWITCH LAR LOW AMBIENT RELAY LAS LOW AMBIENT SWITCH LLSV LIQUID LINE SOLENOID VALVE LPS LOW PRESSURE SWITCH OFM OUTDOOR FAN MOTOR OFR OUTDOOR FAN RELAY OT QUADRUPLE TERMINAL SVR SOLENOID VALVE RELAY TB TERMINAL BLOCK TDR TIME DELAY RELAY TRAN TRANSFORMER |
|--|--|

- NOTES:**
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
 2. USE COPPER CONDUCTORS ONLY.
 3. COMPRESSORS AND FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
 4. TRANSFORMER IS WIRED FOR 460V UNIT.
 5. ON UNITS WITH SPEED CONTROL, REMOVE OFM1 AND OFM3 BLK WIRES FROM TB3 AND CONNECT TO BLK WIRES FROM SPEED CONTROL.

38AU500538 - C09624

TYPICAL CONTROL WIRING - CAS180 SHOWN (460V, DUAL CIRCUIT)

SCHEMATIC
15T 460V DUAL



- FIELD CONTROL WIRING**
- △ FIELD SPLICE
 - (X) MARKED WIRE
 - (X) TERMINAL (MARKED)
 - TERMINAL (UNMARKED)
 - TERMINAL BLOCK
 - SPLICE
 - FACTORY WIRING
 - - - FIELD CONTROL WIRING
 - FIELD POWER WIRING
 - - - ACCESSORY OR OPTIONAL WIRING
 - TO INDICATE COMMON POTENTIAL ONLY, NOT TO REPRESENT WIRING
- LEGEND**
- C CONTACTOR, COMPRESSOR
 - CAP CAPACITOR
 - CADM COMFORT ALERT - DIAGNOSTICS MODULE
 - CH CRANKCASE HEATER
 - COMP COMPRESSOR MOTOR
 - EQUIP EQUIPMENT
 - FU FUSE
 - GR GROUND
 - HPS HIGH PRESSURE SWITCH
 - LAR LOW AMBIENT RELAY
 - LAS LOW AMBIENT SWITCH
 - LLSV LIQUID LINE SOLENOID VALVE
 - LPS LOW PRESSURE SWITCH
 - LPS LOW PRESSURE SWITCH
 - OFM OUTDOOR FAN MOTOR
 - OFR OUTDOOR FAN RELAY
 - QT QUADRUPLE TERMINAL
 - SVR SOLENOID VALVE RELAY
 - TB TERMINAL BLOCK
 - TDR TIME DELAY RELAY
 - TRAN TRANSFORMER

- NOTES:**
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
 2. USE COPPER CONDUCTORS ONLY.
 3. COMPRESSORS AND FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
 4. TRANSFORMER IS WIRING FOR 460V UNIT.
 5. ON UNITS WITH SPEED CONTROL, CONNECT THE BLACK WIRES FROM OFM1 AND OFM3 TO BLK WIRES FROM SPEED CONTROL MODULE AND CONNECT THE BLACK WIRE FROM OFM2 TO TERMINAL 2 ON THE LOW AMBIENT RELAY (LAR).

C09627

38AU500541 -

PERFORMANCE DATA

CAS072, Single Circuit

CONDENSER ONLY RATINGS

SST (F)		AIR TEMPERATURE ENTERING CONDENSER (F)					
		80	85	95	100	105	115
20	TC	46.7	45.1	41.7	39.8	37.9	33.9
	kW	4.04	4.27	4.77	5.04	5.32	5.93
	SDT	91.6	96.4	105.9	110.6	115.3	124.7
25	TC	51.8	50.2	46.5	44.6	42.6	38.4
	kW	4.06	4.29	4.79	5.05	5.33	5.95
	SDT	92.7	97.5	106.9	111.6	116.3	125.6
30	TC	57.0	55.2	51.4	49.4	47.3	42.9
	kW	4.07	4.30	4.80	5.07	5.35	5.96
	SDT	93.9	98.6	108.1	112.7	117.4	126.7
35	TC	62.7	60.8	56.8	54.6	52.4	47.8
	kW	4.09	4.32	4.81	5.08	5.36	5.98
	SDT	95.1	99.8	109.2	113.9	118.6	127.8
40	TC	68.7	66.7	62.5	60.2	57.9	53.0
	kW	4.11	4.34	4.83	5.10	5.38	5.99
	SDT	96.5	101.1	110.5	115.1	119.7	128.8
45	TC	75.2	73.1	68.5	66.2	63.7	58.6
	kW	4.13	4.36	4.84	5.10	5.38	5.99
	SDT	97.9	102.5	111.8	116.3	120.9	129.9
50	TC	82.2	79.9	75.1	72.5	69.9	64.4
	kW	4.15	4.37	4.85	5.12	5.39	6.00
	SDT	99.4	104.0	113.1	117.6	122.2	131.1

NOTE:

Condensing unit only ratings are at 45°F SST and 95°F entering-air temperature. EER = 13.1

CAS091, Single Circuit

CONDENSER ONLY RATINGS

SST (F)		AIR TEMPERATURE ENTERING CONDENSER (F)					
		80	85	95	100	105	115
20	TC	65.2	63.2	59.1	57.0	54.8	50.5
	kW	5.04	5.33	5.98	6.34	6.73	7.60
	SDT	95.3	100.2	109.8	114.7	119.5	129.2
25	TC	71.5	69.4	65.0	62.8	60.5	55.9
	kW	5.12	5.42	6.07	6.42	6.81	7.66
	SDT	96.4	101.2	110.8	115.6	120.4	129.9
30	TC	77.8	75.5	70.9	68.5	66.2	61.3
	kW	5.22	5.51	6.16	6.51	6.89	7.74
	SDT	97.6	102.4	111.9	116.6	121.3	130.7
35	TC	84.8	82.4	77.5	75.0	72.4	67.2
	kW	5.32	5.61	6.26	6.61	6.99	7.83
	SDT	98.8	103.5	112.9	117.6	122.3	131.6
40	TC	92.3	89.7	84.5	81.8	79.0	73.5
	kW	5.44	5.73	6.37	6.72	7.10	7.94
	SDT	100.1	104.8	114.2	118.8	123.5	132.7
45	TC	100.3	97.5	91.9	89.0	86.1	80.1
	kW	5.57	5.86	6.50	6.85	7.23	8.07
	SDT	101.6	106.2	115.5	120.2	124.8	133.9
50	TC	108.7	105.8	99.8	96.7	93.6	87.3
	kW	5.71	6.00	6.64	7.00	7.38	8.21
	SDT	103.1	107.8	117.0	121.6	126.2	135.3

LEGEND:

kW - Compressor Power
 SDT - Saturated Discharge Temperature at Compressor (F)
 SST - Saturated Suction Temperature (F)
 TC - Gross Cooling Capacity (1000 Btuh)

NOTE:

Condensing unit only ratings are at 45°F SST and 95°F entering-air temperature. EER = 13.0

PERFORMANCE DATA (cont.)

CAS121, Single Circuit

CONDENSER ONLY RATINGS

SST (F)		AIR TEMPERATURE ENTERING CONDENSER (F)					
		80	85	95	100	105	115
20	TC	78.0	75.4	70.1	67.3	64.6	58.9
	kW	6.03	6.44	7.31	7.76	8.23	9.21
	SDT	94.0	98.7	108.2	113.0	117.7	127.2
25	TC	86.4	83.6	77.9	74.9	72.0	66.0
	kW	6.11	6.53	7.41	7.87	8.36	9.36
	SDT	95.2	100.0	109.4	114.2	118.9	128.2
30	TC	94.7	91.8	85.6	82.5	79.4	73.0
	kW	6.20	6.62	7.51	7.98	8.47	9.49
	SDT	96.6	101.3	110.7	115.4	120.0	129.2
35	TC	104.0	100.8	94.3	90.9	87.6	80.7
	kW	6.30	6.71	7.61	8.09	8.58	9.62
	SDT	98.1	102.7	112.0	116.6	121.2	130.4
40	TC	113.9	110.4	103.4	99.9	96.2	88.9
	kW	6.39	6.81	7.71	8.20	8.70	9.75
	SDT	99.5	104.2	113.4	117.9	122.5	131.6
45	TC	124.3	120.6	113.1	109.2	105.4	97.5
	kW	6.49	6.92	7.83	8.32	8.82	9.89
	SDT	101.1	105.7	114.8	119.4	123.9	132.9
50	TC	135.4	131.4	123.3	119.2	115.0	106.5
	kW	6.61	7.04	7.96	8.45	8.96	10.03
	SDT	102.8	107.3	116.4	120.9	125.4	134.3

NOTE:

Condensing unit only ratings are at 45°F SST and 95°F entering-air temperature. EER = 13.5

CAS120, Dual Circuit

CONDENSER ONLY RATINGS

SST (°F)		AIR TEMP ENT CONDENSER (°F)					
		85	95	100	105	115	120
20	TC	75.29	69.95	67.18	64.32	58.42	55.21
	kW	6.88	7.89	8.43	8.96	10.04	10.53
	SDT	102.3	111.4	116.1	120.5	129.6	133.7
25	TC	83.12	77.31	74.32	71.28	64.99	61.76
	kW	6.97	7.98	8.53	9.07	10.18	10.73
	SDT	103.6	112.6	117.3	121.8	130.7	135.1
30	TC	91.41	85.21	81.99	78.76	72.08	68.58
	kW	7.06	8.08	8.63	9.18	10.31	10.87
	SDT	104.9	114.0	118.5	122.9	131.8	136.1
35	TC	100.35	93.69	90.26	86.76	85.11	75.65
	kW	7.15	8.18	8.73	9.29	10.42	10.99
	SDT	106.3	115.2	119.8	124.2	132.9	137.1
40	TC	109.90	102.58	98.84	95.06	87.13	83.07
	kW	7.25	8.29	8.83	9.39	10.54	11.12
	SDT	107.6	116.6	121.0	125.4	134.0	138.2
45	TC	119.86	111.84	107.74	103.56	95.02	90.54
	kW	7.36	8.39	8.93	9.49	10.64	11.22
	SDT	109.0	117.9	122.3	126.6	135.1	139.2
50	TC	130.20	121.39	116.90	112.33	103.07	98.17
	kW	7.48	8.51	9.04	9.60	10.75	11.33
	SDT	110.5	119.2	123.5	127.8	136.2	140.2

NOTE: Condensing unit only ratings are at 45°F SST and 95°F entering-air temperature. EER = 13.0

LEGEND:

- kW - Compressor Power
- SDT - Saturated Discharge Temperature at Compressor (°F)
- SST - Saturated Suction Temperature (°F)
- TC - Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

CAS151, Single Circuit

CONDENSER ONLY RATINGS

SST (F)		AIR TEMPERATURE ENTERING CONDENSER (F)					
		80	85	95	100	105	115
20	TC	100.8	97.4	90.3	86.6	83.0	75.5
	kW	8.48	8.97	10.00	10.53	11.07	12.19
	SDT	98.0	102.6	111.8	116.4	120.9	130.0
25	TC	111.8	108.1	100.5	96.6	92.7	84.7
	kW	8.66	9.15	10.20	10.75	11.31	12.47
	SDT	99.6	104.1	113.2	117.7	122.3	131.3
30	TC	122.9	118.9	110.7	106.6	102.4	93.9
	kW	8.84	9.35	10.41	10.97	11.55	12.75
	SDT	101.3	105.8	114.8	119.3	123.8	132.7
35	TC	134.9	130.6	121.9	117.4	113.0	103.8
	kW	9.05	9.55	10.64	11.21	11.80	13.03
	SDT	103.1	107.6	116.5	120.9	125.4	134.2
40	TC	147.7	143.0	133.7	128.9	124.1	114.3
	kW	9.27	9.78	10.88	11.47	12.07	13.32
	SDT	105.1	109.5	118.3	122.8	127.1	135.8
45	TC	161.1	156.2	146.1	141.0	135.8	125.4
	kW	9.51	10.03	11.15	11.73	12.34	13.61
	SDT	107.2	111.6	120.3	124.7	129.0	137.5
50	TC	175.4	170.1	159.3	153.8	148.3	137.1
	kW	9.78	10.30	11.42	12.02	12.63	13.92
	SDT	109.5	113.8	122.4	126.7	130.9	139.4

NOTE: Condensing unit only ratings are at 45 F SST and 95 F entering—air temperature. EER = 12.5

CAS150, Dual Circuit

CONDENSER ONLY RATINGS

SST (°F)		AIR TEMP ENT CONDENSER (°F)					
		85	95	100	105	115	120
20	TC	93.24	86.18	82.60	78.94	71.54	67.78
	kW	9.22	10.36	10.96	11.56	12.76	13.37
	SDT	104.4	113.3	117.8	122.2	130.9	135.2
25	TC	103.39	95.91	92.05	88.15	80.16	76.08
	kW	9.42	10.60	11.21	11.83	13.10	13.73
	SDT	106.1	114.9	119.3	123.7	132.3	136.6
30	TC	114.29	106.19	102.04	97.79	89.15	84.74
	kW	9.63	10.84	11.46	12.10	13.41	14.07
	SDT	107.8	116.6	120.9	125.3	133.8	138.0
35	TC	125.69	116.93	112.44	107.84	105.72	93.69
	kW	9.84	11.07	11.71	12.36	13.70	14.38
	SDT	109.5	118.2	122.6	126.8	135.2	139.4
40	TC	137.57	128.07	123.21	118.21	108.08	102.90
	kW	10.05	11.30	11.95	12.61	13.98	14.68
	SDT	111.3	119.9	124.2	128.4	136.7	140.8
45	TC	149.86	139.53	134.26	128.83	117.83	112.22
	kW	10.27	11.53	12.18	12.85	14.24	14.95
	SDT	113.1	121.6	125.8	130.0	138.1	142.1
50	TC	162.51	151.29	145.56	139.64	127.71	121.55
	kW	10.50	11.76	12.42	13.09	14.48	15.20
	SDT	114.9	123.3	127.5	131.6	139.6	143.5

NOTE: Condensing unit only ratings are at 45°F SST and 95°F entering—air temperature. EER = 11.5

LEGEND:

- kW - Compressor Power
- SDT - Saturated Discharge Temperature at Compressor (°F)
- SST - Saturated Suction Temperature (°F)
- TC - Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

CAS181, Single Circuit

CONDENSER ONLY RATINGS

SST (°F)		AIR TEMPERATURE ENTERING CONDENSER (°F)					
		80	85	95	105	115	125
20	TC	125.5	121.8	114.2	106.6	99.7	79.7
	kW	10.5	11.2	12.6	14.2	16.0	17.5
	SDT	98.6	103.4	113.0	122.7	134.9	136.0
25	TC	138.7	134.7	126.5	118.1	109.3	98.5
	kW	10.7	11.4	12.8	14.3	16.0	17.9
	SDT	100.0	104.7	114.2	123.6	132.9	140.5
30	TC	152.9	148.6	139.8	130.7	120.9	104.9
	kW	10.9	11.6	13.0	14.6	16.2	17.8
	SDT	101.4	106.2	115.5	125.0	133.6	139.4
35	TC	168.2	163.5	154.1	144.2	133.6	121.2
	kW	11.2	11.8	13.2	14.8	16.5	18.1
	SDT	102.9	107.5	117.0	126.2	134.8	142.1
40	TC	184.9	179.4	169.3	158.7	147.6	135.1
	kW	11.5	12.0	13.5	15.1	16.8	18.5
	SDT	105.2	108.9	118.5	127.7	136.7	144.5
45	TC	202.1	196.7	185.7	174.3	162.5	150.4
	kW	11.7	12.4	13.9	15.6	17.5	19.6
	SDT	106.4	111.2	120.9	130.7	140.4	150.2
50	TC	220.6	214.7	202.1	190.0	174.6	159.6
	kW	11.9	12.6	13.9	15.4	16.9	18.5
	SDT	107.2	111.7	120.4	129.4	136.9	144.9

NOTE: Condensing unit only ratings are at 45°F SST and 95°F entering—air temperature. EER = 12.7

CAS180, Dual Circuit

CONDENSER ONLY RATINGS

SST (°F)		AIR TEMPERATURE ENTERING CONDENSER (°F)					
		80	85	95	105	115	125
20	TC	127.6	123.7	116.0	108.1	99.7	90.2
	kW	10.0	10.6	11.9	13.4	14.9	16.6
	SDT	96.0	100.5	109.8	119.2	128.3	137.0
25	TC	140.9	136.7	128.3	119.5	110.4	101.2
	kW	10.0	10.6	11.9	13.4	14.9	16.6
	SDT	96.0	100.5	109.8	119.2	128.3	137.0
30	TC	155.0	150.5	141.3	132.0	122.3	111.4
	kW	10.4	11.0	12.3	13.7	15.3	17.0
	SDT	98.7	103.3	112.4	121.5	130.6	139.1
35	TC	170.1	165.3	155.4	145.2	134.4	123.3
	kW	10.6	11.2	12.5	14.0	15.5	17.2
	SDT	100.1	104.7	113.8	122.8	131.7	140.4
40	TC	186.3	181.0	170.3	159.0	147.3	134.9
	kW	10.8	11.4	12.8	14.2	15.8	17.4
	SDT	101.6	106.1	115.1	124.0	132.8	141.4
45	TC	203.4	197.6	185.7	173.5	160.6	147.2
	kW	11.1	11.7	13.0	14.4	16.0	17.6
	SDT	103.2	107.6	116.5	125.4	134.0	142.5
50	TC	221.4	214.9	202.0	188.6	174.5	159.7
	kW	11.4	12.0	13.3	14.7	16.2	17.9
	SDT	104.8	109.2	118.0	126.7	135.2	143.5

NOTE: Condensing unit only ratings are at 45°F SST and 95°F entering—air temperature. EER = 13.2

LEGEND:

- kW - Compressor Power
- SDT - Saturated Discharge Temperature at Compressor (°F)
- SST - Saturated Suction Temperature (°F)
- TC - Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

CAS241, Single Circuit

CONDENSER ONLY RATINGS

SST (°F)		AIR TEMPERATURE ENTERING CONDENSER (°F)					
		80	85	95	105	115	125
20	TC	159.2	154.5	144.5	133.9	122.5	110.2
	kW	13.0	13.7	15.3	17.1	19.2	21.5
	SDT	97.3	101.8	110.6	119.3	127.9	136.5
25	TC	176.1	171.0	160.2	148.8	136.5	123.2
	kW	13.2	14.0	15.6	17.4	19.5	21.8
	SDT	98.9	103.3	112.0	120.7	129.2	137.6
30	TC	194.2	188.6	176.9	164.5	151.3	136.9
	kW	13.5	14.3	15.9	17.7	19.7	22.0
	SDT	100.6	104.9	113.6	122.1	130.5	138.8
35	TC	213.5	207.4	194.7	181.2	166.8	151.2
	kW	13.8	14.6	16.2	18.0	20.0	22.3
	SDT	102.4	106.7	115.2	123.6	131.9	140.1
40	TC	234.1	227.4	213.5	198.8	183.1	166.1
	kW	14.2	14.9	16.5	18.3	20.3	22.6
	SDT	104.3	108.5	116.9	125.2	133.3	141.4
45	TC	255.9	248.6	233.3	217.3	200.1	181.7
	kW	14.6	15.3	16.9	18.7	20.7	22.9
	SDT	106.3	110.5	118.7	126.8	134.9	142.7
50	TC	279.0	270.9	254.2	236.7	218.1	197.8
	kW	15.1	15.8	17.3	19.1	21.1	23.2
	SDT	108.5	112.5	120.6	128.6	136.5	144.1

NOTE: Condensing unit only ratings are at 45°F SST and 95°F entering—air temperature. EER = 12.9

CAS240, Dual Circuit

CONDENSER ONLY RATINGS

SST (°F)		AIR TEMPERATURE ENTERING CONDENSER (°F)					
		80	85	95	105	115	125
20	TC	160.3	155.5	145.3	134.3	122.5	109.6
	kW	12.7	13.4	15.0	16.8	18.8	21.1
	SDT	97.0	101.5	110.3	119.1	127.7	136.3
25	TC	177.2	171.9	160.8	149.0	136.3	122.3
	kW	12.7	13.4	15.0	16.8	18.8	21.1
	SDT	97.0	101.5	110.3	119.1	127.7	136.3
30	TC	195.1	189.4	177.4	164.5	150.7	135.6
	kW	13.2	13.9	15.5	17.3	19.3	21.5
	SDT	100.3	104.6	113.3	121.8	130.3	138.6
35	TC	214.3	208.0	194.9	180.9	165.9	149.5
	kW	13.5	14.3	15.8	17.6	19.6	21.8
	SDT	102.1	106.3	114.9	123.3	131.7	139.8
40	TC	234.6	227.7	213.4	198.2	181.7	163.9
	kW	13.9	14.6	16.2	17.9	19.9	22.1
	SDT	104.0	108.2	116.6	124.9	133.1	141.1
45	TC	256.3	258.7	242.3	224.9	206.2	186.1
	kW	14.3	15.2	16.7	18.5	20.4	22.5
	SDT	106.0	111.1	119.2	127.4	135.4	143.1
50	TC	279.1	272.0	254.7	236.3	216.6	195.4
	kW	14.7	15.5	17.0	18.7	20.6	22.7
	SDT	108.1	112.3	120.4	128.4	136.4	143.9

NOTE: Condensing unit only ratings are at 45°F SST and 95°F entering—air temperature. EER = 13.0

LEGEND:

- kW - Compressor Power
- SDT - Saturated Discharge Temperature at Compressor (°F)
- SST - Saturated Suction Temperature (°F)
- TC - Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

CAS072 & FAS072

COMBINATION RATINGS

				AMBIENT TEMPERATURE														
				85			95			105			115			125		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
1800 Cfm	EA (wB)	58	THC	65.8	65.8	74.1	63.4	63.4	71.4	60.7	60.7	68.3	58.3	58.3	65.7	54.7	54.7	61.6
			SHC	57.4	65.8	74.1	55.3	63.4	71.4	53.0	60.7	68.3	50.9	58.3	65.7	47.8	54.7	61.6
		62	THC	68.1	68.1	70.7	65.2	65.2	69.2	62.0	62.0	67.6	58.1	58.1	65.7	54.6	54.6	55.4
			SHC	51.9	61.3	70.7	50.4	59.8	69.2	48.9	58.3	67.6	47.1	56.4	65.7	36.3	45.9	55.4
		67	THC	74.0	74.0	74.0	70.9	70.9	70.9	67.3	67.3	67.3	63.4	63.4	63.4	56.7	56.7	56.7
	SHC		42.3	51.8	61.3	41.0	50.5	59.9	39.5	49.0	58.4	37.9	47.3	56.8	35.3	44.9	54.4	
	72	THC	80.7	80.7	80.7	77.3	77.3	77.3	73.6	73.6	73.6	69.4	69.4	69.4	63.2	63.2	63.2	
		SHC	32.7	42.2	51.8	31.4	40.9	50.4	30.0	39.5	49.0	28.4	37.9	47.4	26.2	35.7	45.3	
	76	THC	-	86.2	86.2	-	82.6	82.6	-	78.6	78.6	-	74.3	74.3	-	70.7	70.7	
		SHC	-	34.5	44.3	-	33.2	43.0	-	31.8	41.6	-	30.3	40.0	-	29.0	38.7	
2100 Cfm	EA (wB)	58	THC	69.0	69.0	77.8	66.5	66.5	74.9	63.7	63.7	71.8	61.2	61.2	69.0	-	-	-
			SHC	60.3	69.0	77.8	58.0	66.5	74.9	55.6	63.7	71.8	53.5	61.2	69.0	-	-	-
		62	THC	70.2	70.2	77.1	67.2	67.2	75.5	64.0	64.0	73.6	60.4	60.4	70.7	-	-	-
			SHC	55.7	66.4	77.1	54.2	64.8	75.5	52.5	63.0	73.6	50.2	60.4	70.7	-	-	-
		67	THC	75.9	75.9	75.9	72.6	72.6	72.6	68.9	68.9	68.9	64.8	64.8	64.8	59.1	59.1	59.9
	SHC		44.8	55.7	66.5	43.4	54.3	65.1	41.9	52.8	63.6	40.3	51.1	62.0	38.1	49.0	59.9	
	72	THC	82.5	82.5	82.5	79.0	79.0	79.0	75.2	75.2	75.2	70.9	70.9	70.9	63.9	63.9	63.9	
		SHC	33.7	44.6	55.5	32.4	43.3	54.2	31.0	41.8	52.7	29.4	40.3	51.1	26.9	37.9	48.8	
	76	THC	-	88.1	88.1	-	84.3	84.3	-	80.2	80.2	-	75.5	75.5	-	71.8	71.8	
		SHC	-	35.8	47.0	-	34.5	45.6	-	33.0	44.2	-	31.4	42.5	-	30.2	41.2	
2400 Cfm	EA (wB)	58	THC	71.7	71.7	80.8	69.0	69.0	77.8	66.1	66.1	74.5	62.6	62.6	70.6	58.9	58.9	66.3
			SHC	62.6	71.7	80.8	60.3	69.0	77.8	57.7	66.1	74.5	54.7	62.6	70.6	51.4	58.9	66.3
		62	THC	72.0	72.0	82.7	69.1	69.1	80.8	66.2	66.2	77.4	63.0	63.0	73.6	-	-	-
			SHC	59.0	70.9	82.7	57.4	69.1	80.8	55.0	66.2	77.4	52.3	63.0	73.6	-	-	-
		67	THC	77.3	77.3	77.3	74.0	74.0	74.0	70.2	70.2	70.2	66.1	66.1	66.9	62.5	62.5	65.0
	SHC		47.1	59.3	71.5	45.7	57.9	70.1	44.2	56.4	68.6	42.6	54.7	66.9	41.0	53.0	65.0	
	72	THC	84.0	84.0	84.0	80.4	80.4	80.4	76.4	76.4	76.4	71.8	71.8	71.8	67.5	67.5	67.5	
		SHC	34.6	46.9	59.1	33.3	45.5	57.8	31.9	44.1	56.3	30.2	42.4	54.6	28.7	40.8	52.9	
	76	THC	-	89.5	89.5	-	85.7	85.7	-	81.4	81.4	-	76.7	76.7	-	-	-	
		SHC	-	36.9	49.4	-	35.6	48.1	-	34.2	46.6	-	32.6	45.0	-	-	-	
2700 Cfm	EA (wB)	58	THC	73.9	73.9	83.3	71.2	71.2	80.2	68.1	68.1	76.7	64.8	64.8	73.0	58.6	58.6	66.0
			SHC	64.6	73.9	83.3	62.2	71.2	80.2	59.5	68.1	76.7	56.5	64.8	73.0	51.2	58.6	66.0
		62	THC	74.0	74.0	86.5	71.3	71.3	83.3	68.2	68.2	79.7	64.8	64.8	75.8	-	-	-
			SHC	61.5	74.0	86.5	59.2	71.3	83.3	56.6	68.2	79.7	53.8	64.8	75.8	-	-	-
		67	THC	78.5	78.5	78.5	75.1	75.1	75.1	71.2	71.2	73.2	67.0	67.0	71.5	63.2	63.2	69.4
	SHC		49.3	62.7	76.2	47.9	61.3	74.8	46.4	59.8	73.2	44.7	58.1	71.5	43.0	56.2	69.4	
	72	THC	85.1	85.1	85.1	81.4	81.4	81.4	77.3	77.3	77.3	72.6	72.6	72.6	65.3	65.3	65.3	
		SHC	35.5	49.0	62.5	34.2	47.6	61.1	32.7	46.1	59.6	31.1	44.5	57.9	28.6	42.2	55.7	
	76	THC	-	90.7	90.7	-	86.7	86.7	-	82.3	82.3	-	-	-	-	-	-	
		SHC	-	38.1	51.8	-	36.7	50.4	-	35.3	48.9	-	-	-	-	-	-	
3000 Cfm	EA (wB)	58	THC	75.9	75.9	85.5	73.0	73.0	82.3	69.8	69.8	78.7	66.3	66.3	74.7	62.4	62.4	70.4
			SHC	66.3	75.9	85.5	63.8	73.0	82.3	61.0	69.8	78.7	57.9	66.3	74.7	54.5	62.4	70.4
		62	THC	75.9	75.9	88.8	73.1	73.1	85.4	69.9	69.9	81.7	66.4	66.4	77.6	60.2	60.2	70.4
			SHC	63.1	75.9	88.8	60.7	73.1	85.4	58.0	69.9	81.7	55.1	66.4	77.6	50.0	60.2	70.4
		67	THC	79.5	79.5	80.7	76.0	76.0	79.3	72.1	72.1	77.6	67.9	67.9	75.7	63.7	63.7	73.5
	SHC		51.4	66.0	80.7	49.9	64.6	79.3	48.4	63.0	77.6	46.7	61.2	75.7	44.8	59.2	73.5	
	72	THC	86.1	86.1	86.1	82.3	82.3	82.3	78.0	78.0	78.0	73.3	73.3	73.3	69.6	69.6	69.6	
		SHC	36.3	51.0	65.8	35.0	49.7	64.4	33.5	48.1	62.8	31.9	46.5	61.1	30.5	44.9	59.3	
	76	THC	-	91.6	91.6	-	87.6	87.6	-	-	-	-	-	-	-	-	-	
		SHC	-	39.1	54.0	-	37.8	52.7	-	-	-	-	-	-	-	-	-	

- Not Operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS072 & FAS091

COMBINATION RATINGS

			AMBIENT TEMPERATURE															
			85			95			105			115			125			
			EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)			
			75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
2250 Cfm	EA (WB)	58	THC	71.6	71.6	80.7	69.1	69.1	77.9	66.2	66.2	74.6	63.2	63.2	72.2	-	-	-
			SHC	62.5	71.6	80.7	60.3	69.1	77.9	57.8	66.2	74.6	55.0	63.2	72.2	-	-	-
		62	THC	72.5	72.5	81.5	69.6	69.6	79.6	66.6	66.6	76.6	63.2	63.2	73.2	-	-	-
			SHC	58.5	70.0	81.5	56.9	68.2	79.6	54.6	65.6	76.6	52.1	62.7	73.2	-	-	-
		67	THC	78.1	78.1	78.1	74.8	74.8	74.8	71.2	71.2	71.2	67.0	67.0	67.7	60.9	60.9	64.5
	SHC		46.9	58.7	70.5	45.6	57.4	69.1	44.1	55.9	67.6	42.4	54.2	66.0	40.1	52.0	63.8	
	72	THC	84.9	84.9	84.9	81.4	81.4	81.4	77.4	77.4	77.4	73.1	73.1	73.1	68.9	68.9	68.9	
		SHC	34.9	46.7	58.6	33.6	45.4	57.3	32.1	43.9	55.8	30.5	42.3	54.1	29.0	40.7	52.5	
	76	THC	-	90.6	90.6	-	86.9	86.9	-	82.5	82.5	-	77.1	77.1	-	-	-	
		SHC	-	37.1	49.1	-	35.9	47.9	-	33.5	43.4	-	31.9	41.8	-	-	-	
2600 Cfm	EA (WB)	58	THC	74.8	74.8	84.2	72.1	72.1	81.3	69.0	69.0	77.8	65.7	65.7	74.0	62.2	62.2	70.0
			SHC	65.3	74.8	84.2	62.9	72.1	81.3	60.3	69.0	77.8	57.3	65.7	74.0	54.3	62.2	70.0
		62	THC	74.9	74.9	87.2	72.1	72.1	84.3	69.1	69.1	80.8	65.7	65.7	76.8	61.7	61.7	72.1
			SHC	62.0	74.6	87.2	60.0	72.1	84.3	57.4	69.1	80.8	54.6	65.7	76.8	51.2	61.7	72.1
		67	THC	79.8	79.8	79.8	76.3	76.3	76.4	72.6	72.6	74.2	68.4	68.4	71.9	63.9	63.9	69.8
	SHC		49.7	63.1	76.5	48.3	61.8	75.1	46.8	60.2	73.6	45.1	58.5	71.9	43.3	56.5	69.8	
	72	THC	86.5	86.5	86.5	82.9	82.9	82.9	78.8	78.8	78.8	74.3	74.3	74.3	69.5	69.5	69.5	
		SHC	36.0	49.4	62.9	34.7	48.1	61.6	33.2	46.6	60.1	31.6	45.0	58.4	29.9	43.3	56.7	
	76	THC	-	92.3	92.3	-	87.7	87.7	-	-	-	-	-	-	-	-	-	
		SHC	-	38.5	52.2	-	36.5	49.2	-	-	-	-	-	-	-	-	-	
3000 Cfm	EA (WB)	58	THC	77.6	77.6	87.4	74.8	74.8	84.2	71.5	71.5	80.6	67.9	67.9	76.5	64.9	64.9	73.1
			SHC	67.7	77.6	87.4	65.3	74.8	84.2	62.5	71.5	80.6	59.3	67.9	76.5	56.7	64.9	73.1
		62	THC	77.7	77.7	90.8	74.8	74.8	87.5	71.6	71.6	83.7	67.9	67.9	79.4	64.9	64.9	75.9
			SHC	64.5	77.7	90.8	62.1	74.8	87.5	59.5	71.6	83.7	56.4	67.9	79.4	53.9	64.9	75.9
		67	THC	81.2	81.2	83.0	77.7	77.7	81.6	73.9	73.9	80.0	69.6	69.6	78.0	65.3	65.3	74.4
	SHC		52.7	67.8	83.0	51.3	66.4	81.6	49.8	64.9	80.0	48.0	63.0	78.0	44.5	59.4	74.4	
	72	THC	87.9	87.9	87.9	84.2	84.2	84.2	80.0	80.0	80.0	75.3	75.3	75.3	70.2	70.2	70.2	
		SHC	37.1	52.3	67.6	35.8	51.0	66.2	34.3	49.5	64.7	32.7	47.9	63.0	31.0	46.1	61.2	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3400 Cfm	EA (WB)	58	THC	79.7	79.7	89.8	76.8	76.8	86.4	73.4	73.4	82.7	69.6	69.6	78.4	64.8	64.8	73.0
			SHC	69.6	79.7	89.8	67.0	76.8	86.4	64.1	73.4	82.7	60.8	69.6	78.4	56.6	64.8	73.0
		62	THC	79.8	79.8	93.3	76.8	76.8	89.8	73.5	73.5	85.9	69.7	69.7	81.4	65.6	65.6	76.8
			SHC	66.3	79.8	93.3	63.8	76.8	89.8	61.0	73.5	85.9	57.8	69.7	81.4	54.5	65.6	76.8
		67	THC	82.3	82.3	88.8	78.8	78.8	87.3	74.9	74.9	85.5	70.6	70.6	83.2	-	-	-
	SHC		55.4	72.1	88.8	53.9	70.6	87.3	52.4	68.9	85.5	50.5	66.8	83.2	-	-	-	
	72	THC	88.9	88.9	88.9	85.1	85.1	85.1	80.8	80.8	80.8	76.1	76.1	76.1	-	-	-	
		SHC	38.2	55.0	71.9	36.9	53.7	70.5	35.4	52.2	69.0	33.8	50.5	67.3	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3750 Cfm	EA (WB)	58	THC	81.5	81.5	91.9	78.5	78.5	88.4	75.0	75.0	84.5	71.1	71.1	80.1	64.7	64.7	72.9
			SHC	71.2	81.5	91.9	68.5	78.5	88.4	65.5	75.0	84.5	62.1	71.1	80.1	56.5	64.7	72.9
		62	THC	81.6	81.6	95.4	78.5	78.5	91.8	75.1	75.1	87.8	71.2	71.2	83.2	66.3	66.3	77.5
			SHC	67.8	81.6	95.4	65.2	78.5	91.8	62.4	75.1	87.8	59.1	71.2	83.2	55.1	66.3	77.5
		67	THC	83.2	83.2	93.9	79.7	79.7	92.2	75.8	75.8	90.3	71.5	71.5	87.7	-	-	-
	SHC		57.7	75.8	93.9	56.2	74.2	92.2	54.6	72.4	90.3	52.6	70.2	87.7	-	-	-	
	72	THC	89.7	89.7	89.7	85.8	85.8	85.8	81.5	81.5	81.5	76.8	76.8	76.8	-	-	-	
		SHC	39.1	57.4	75.7	37.8	56.0	74.3	36.3	54.5	72.7	34.7	52.8	71.0	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Not Operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS091 & FAS091

COMBINATION RATINGS

				AMBIENT TEMPERATURE														
				85			95			105			115			125		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
2250 Cfm	EA (wB)	58	THC	84.6	84.6	95.4	81.7	81.7	92.1	78.5	78.5	88.5	75.5	75.5	85.1	70.7	70.7	79.7
		SHC	73.9	84.6	95.4	71.3	81.7	92.1	68.5	78.5	88.5	65.9	75.5	85.1	61.7	70.7	79.7	
	62	THC	88.2	88.2	89.4	84.6	84.6	87.6	80.7	80.7	85.6	76.9	76.9	83.6	73.2	73.2	81.3	
		SHC	66.1	77.7	89.4	64.3	75.9	87.6	62.4	74.0	85.6	60.5	72.0	83.6	58.5	69.9	81.3	
	67	THC	95.5	95.5	95.5	91.5	91.5	91.5	87.3	87.3	87.3	82.7	82.7	82.7	76.1	76.1	76.1	
		SHC	54.1	65.8	77.5	52.3	64.1	75.8	50.5	62.2	74.0	48.6	60.3	72.0	46.0	57.8	69.5	
	72	THC	103.4	103.4	103.4	99.2	99.2	99.2	94.6	94.6	94.6	89.6	89.6	89.6	82.3	82.3	82.3	
		SHC	41.8	53.7	65.5	40.2	52.0	63.8	38.4	50.2	62.0	36.6	48.3	60.1	33.8	45.6	57.4	
	76	THC	-	109.9	109.9	-	105.4	105.4	-	100.6	100.6	-	95.3	95.3	-	87.8	87.8	
		SHC	-	43.9	56.2	-	42.3	54.7	-	40.6	52.8	-	38.7	50.9	-	36.1	48.3	
2625 Cfm	EA (wB)	58	THC	88.7	88.7	99.9	85.6	85.6	96.4	82.1	82.1	92.5	78.7	78.7	88.7	75.4	75.4	85.0
		SHC	77.4	88.7	99.9	74.7	85.6	96.4	71.7	82.1	92.5	68.8	78.7	88.7	65.8	75.4	85.0	
	62	THC	90.7	90.7	97.2	87.0	87.0	95.3	83.0	83.0	93.1	78.9	78.9	90.6	75.3	75.3	86.4	
		SHC	70.7	84.0	97.2	68.8	82.1	95.3	66.9	80.0	93.1	64.7	77.6	90.6	61.7	74.0	86.4	
	67	THC	97.8	97.8	97.8	93.7	93.7	93.7	89.2	89.2	89.2	84.4	84.4	84.4	76.7	76.7	76.7	
		SHC	57.0	70.4	83.8	55.3	68.7	82.1	53.4	66.8	80.2	51.5	64.8	78.2	48.6	62.0	75.5	
	72	THC	105.7	105.7	105.7	101.3	101.3	101.3	96.5	96.5	96.5	91.5	91.5	91.5	86.2	86.2	86.2	
		SHC	43.0	56.5	70.0	41.4	54.9	68.3	39.6	53.0	66.5	37.8	51.2	64.5	35.8	49.2	62.5	
	76	THC	-	112.2	112.2	-	107.6	107.6	-	102.5	102.5	-	97.0	97.0	-	-	-	
		SHC	-	45.4	59.5	-	43.8	57.8	-	42.0	55.9	-	40.2	54.0	-	-	-	
3000 Cfm	EA (wB)	58	THC	92.0	92.0	103.7	88.7	88.7	99.9	85.1	85.1	95.9	81.2	81.2	91.5	76.0	76.0	85.7
		SHC	80.3	92.0	103.7	77.4	88.7	99.9	74.3	85.1	95.9	70.9	81.2	91.5	66.4	76.0	85.7	
	62	THC	92.9	92.9	104.3	89.2	89.2	102.0	85.1	85.1	99.5	81.4	81.4	95.1	-	-	-	
		SHC	74.9	89.6	104.3	72.9	87.4	102.0	70.7	85.1	99.5	67.6	81.4	95.1	-	-	-	
	67	THC	99.6	99.6	99.6	95.3	95.3	95.3	90.8	90.8	90.8	86.0	86.0	86.0	79.1	79.1	81.7	
		SHC	59.7	74.7	89.8	58.0	73.0	88.0	56.1	71.1	86.1	54.2	69.1	84.1	51.7	66.7	81.7	
	72	THC	107.5	107.5	107.5	103.0	103.0	103.0	98.0	98.0	98.0	92.9	92.9	92.9	88.0	88.0	88.0	
		SHC	44.1	59.2	74.3	42.5	57.5	72.6	40.7	55.7	70.7	38.8	53.8	68.7	37.0	51.8	66.7	
	76	THC	-	114.0	114.0	-	109.1	109.1	-	103.9	103.9	-	98.3	98.3	-	-	-	
		SHC	-	46.9	62.4	-	45.2	60.7	-	43.4	58.8	-	41.5	56.8	-	-	-	
3375 Cfm	EA (wB)	58	THC	94.8	94.8	106.8	91.3	91.3	102.9	87.5	87.5	98.6	83.4	83.4	94.0	77.9	77.9	87.8
		SHC	82.8	94.8	106.8	79.7	91.3	102.9	76.4	87.5	98.6	72.9	83.4	94.0	68.0	77.9	87.8	
	62	THC	94.8	94.8	110.9	91.4	91.4	106.8	87.6	87.6	102.4	83.5	83.5	97.6	79.3	79.3	92.7	
		SHC	78.8	94.8	110.9	75.9	91.4	106.8	72.8	87.6	102.4	69.3	83.5	97.6	65.9	79.3	92.7	
	67	THC	101.0	101.0	101.0	96.6	96.6	96.6	92.0	92.0	92.0	87.0	87.0	89.6	82.8	82.8	87.3	
		SHC	62.3	78.9	95.4	60.6	77.1	93.7	58.7	75.2	91.7	56.7	73.2	89.6	54.8	71.0	87.3	
	72	THC	108.9	108.9	108.9	104.3	104.3	104.3	99.2	99.2	99.2	93.8	93.8	93.8	86.1	86.1	86.1	
		SHC	45.2	61.7	78.3	43.5	60.0	76.6	41.7	58.2	74.7	39.7	56.2	72.6	37.1	53.6	70.0	
	76	THC	-	115.4	115.4	-	110.4	110.4	-	105.1	105.1	-	99.3	99.3	-	92.2	92.2	
		SHC	-	48.2	65.2	-	46.5	63.4	-	44.7	61.6	-	42.7	59.5	-	40.4	57.1	
3750 Cfm	EA (wB)	58	THC	97.1	97.1	109.5	93.5	93.5	105.4	89.6	89.6	101.0	85.3	85.3	96.1	-	-	-
		SHC	84.8	97.1	109.5	81.7	93.5	105.4	78.2	89.6	101.0	74.5	85.3	96.1	-	-	-	
	62	THC	97.2	97.2	113.7	93.6	93.6	109.5	89.7	89.7	104.8	85.5	85.5	100.0	78.2	78.2	91.4	
		SHC	80.8	97.2	113.7	77.8	93.6	109.5	74.5	89.7	104.8	71.1	85.5	100.0	64.9	78.2	91.4	
	67	THC	102.2	102.2	102.2	97.7	97.7	99.0	93.1	93.1	97.0	88.1	88.1	94.8	-	-	-	
		SHC	64.8	82.8	100.8	63.0	81.0	99.0	61.1	79.1	97.0	59.1	77.0	94.8	-	-	-	
	72	THC	110.1	110.1	110.1	105.3	105.3	105.3	100.2	100.2	100.2	94.7	94.7	94.7	90.0	90.0	90.0	
		SHC	46.1	64.2	82.2	44.4	62.4	80.4	42.6	60.5	78.4	40.7	58.5	76.4	38.9	56.6	74.2	
	76	THC	-	116.5	116.5	-	111.5	111.5	-	106.0	106.0	-	100.1	100.1	-	90.8	90.8	
		SHC	-	49.4	67.8	-	47.7	66.0	-	45.9	64.1	-	43.9	62.0	-	40.8	58.8	

- Not Operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS091 & FAS120

COMBINATION RATINGS

			AMBIENT TEMPERATURE															
			85			95			105			115			125			
			EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)			
			75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
3000 Cfm	EA (WB)	58	THC	93.7	93.7	105.5	90.3	90.3	101.8	86.7	86.7	97.7	82.7	82.7	93.2	-	-	-
			SHC	81.8	93.7	105.5	78.9	90.3	101.8	75.7	86.7	97.7	72.2	82.7	93.2	-	-	-
		62	THC	94.5	94.5	106.5	90.8	90.8	104.2	86.8	86.8	101.5	83.0	83.0	97.0	78.0	78.0	91.2
			SHC	76.4	91.4	106.5	74.4	89.3	104.2	72.1	86.8	101.5	68.9	83.0	97.0	64.8	78.0	91.2
		67	THC	101.3	101.3	101.3	97.0	97.0	97.0	92.4	92.4	92.4	87.7	87.7	87.7	80.4	80.4	83.5
	SHC		60.9	76.3	91.7	59.2	74.5	89.9	57.3	72.7	88.0	55.4	70.7	86.0	52.7	68.1	83.5	
	72	THC	109.4	109.4	109.4	104.9	104.9	104.9	100.0	100.0	100.0	94.7	94.7	94.7	87.1	87.1	87.1	
		SHC	44.9	60.4	75.8	43.3	58.7	74.1	41.5	56.9	72.2	39.6	54.9	70.2	36.9	52.2	67.6	
	76	THC	-	116.1	116.1	-	111.3	111.3	-	106.1	106.1	-	100.4	100.4	-	-	-	
		SHC	-	47.7	63.5	-	46.0	61.8	-	44.3	60.0	-	42.3	57.9	-	-	-	
3500 Cfm	EA (WB)	58	THC	97.4	97.4	109.7	93.9	93.9	105.8	90.0	90.0	101.4	85.9	85.9	96.8	79.7	79.7	89.8
			SHC	85.0	97.4	109.7	82.0	93.9	105.8	78.6	90.0	101.4	75.0	85.9	96.8	69.6	79.7	89.8
		62	THC	97.5	97.5	114.0	93.9	93.9	109.9	90.1	90.1	105.4	86.0	86.0	100.5	82.6	82.6	96.6
			SHC	81.0	97.5	114.0	78.0	93.9	109.9	74.8	90.1	105.4	71.4	86.0	100.5	68.6	82.6	96.6
		67	THC	103.2	103.2	103.2	98.8	98.8	98.8	94.2	94.2	95.8	89.1	89.1	93.7	82.7	82.7	91.4
	SHC		64.5	82.1	99.6	62.8	80.3	97.8	60.9	78.4	95.8	58.9	76.3	93.7	56.5	73.9	91.4	
	72	THC	111.2	111.2	111.2	106.6	106.6	106.6	101.6	101.6	101.6	96.2	96.2	96.2	88.8	88.8	88.8	
		SHC	46.3	63.9	81.4	44.7	62.2	79.7	42.9	60.3	77.8	40.9	58.3	75.8	38.4	55.8	73.2	
	76	THC	-	117.9	117.9	-	113.0	113.0	-	107.6	107.6	-	101.8	101.8	-	-	-	
		SHC	-	49.5	67.4	-	47.8	65.6	-	46.0	63.7	-	44.0	61.6	-	-	-	
4000 Cfm	EA (WB)	58	THC	100.4	100.4	113.1	96.7	96.7	109.0	92.7	92.7	104.5	88.4	88.4	99.6	82.0	82.0	92.4
			SHC	87.7	100.4	113.1	84.4	96.7	109.0	80.9	92.7	104.5	77.2	88.4	99.6	71.6	82.0	92.4
		62	THC	100.4	100.4	117.4	96.8	96.8	113.2	92.8	92.8	108.5	88.4	88.4	103.4	81.7	81.7	95.5
			SHC	83.4	100.4	117.4	80.4	96.8	113.2	77.1	92.8	108.5	73.5	88.4	103.4	67.8	81.7	95.5
		67	THC	104.7	104.7	107.0	100.3	100.3	105.1	95.5	95.5	103.1	90.4	90.4	100.8	82.8	82.8	94.5
	SHC		67.9	87.5	107.0	66.1	85.6	105.1	64.2	83.6	103.1	62.2	81.5	100.8	54.7	74.6	94.5	
	72	THC	112.7	112.7	112.7	108.0	108.0	108.0	102.8	102.8	102.8	97.3	97.3	97.3	89.9	89.9	89.9	
		SHC	47.7	67.2	86.7	46.0	65.5	84.9	44.1	63.6	83.0	42.2	61.6	80.9	39.7	59.0	78.4	
	76	THC	-	119.4	119.4	-	114.3	114.3	-	108.7	108.7	-	103.0	103.0	-	94.3	94.3	
		SHC	-	51.2	71.0	-	49.5	69.2	-	47.6	67.2	-	45.6	65.1	-	42.8	62.0	
4500 Cfm	EA (WB)	58	THC	102.7	102.7	115.7	98.9	98.9	111.5	94.8	94.8	106.8	90.3	90.3	101.7	85.1	85.1	95.9
			SHC	89.7	102.7	115.7	86.3	98.9	111.5	82.7	94.8	106.8	78.9	90.3	101.7	74.3	85.1	95.9
		62	THC	102.8	102.8	120.2	99.0	99.0	115.7	94.8	94.8	110.9	90.3	90.3	105.6	83.6	83.6	97.8
			SHC	85.4	102.8	120.2	82.2	99.0	115.7	78.8	94.8	110.9	75.1	90.3	105.6	69.5	83.6	97.8
		67	THC	105.9	105.9	113.8	101.5	101.5	111.7	96.7	96.7	109.5	91.6	91.6	106.8	84.0	84.0	100.0
	SHC		71.0	92.4	113.8	69.2	90.5	111.7	67.2	88.3	109.5	65.0	85.9	106.8	57.0	76.0	100.0	
	72	THC	113.8	113.8	113.8	109.0	109.0	109.0	103.7	103.7	103.7	98.1	98.1	98.1	89.5	89.5	89.5	
		SHC	48.9	70.3	91.7	47.2	68.6	89.9	45.3	66.6	87.9	43.4	64.6	85.7	40.6	61.8	83.1	
	76	THC	-	120.4	120.4	-	115.3	115.3	-	109.6	109.6	-	103.9	103.9	-	-	-	
		SHC	-	52.7	74.3	-	51.0	72.4	-	49.1	70.3	-	47.1	68.1	-	-	-	
5000 Cfm	EA (WB)	58	THC	105.0	105.0	118.3	101.0	101.0	113.9	96.8	96.8	109.0	92.1	92.1	103.8	88.1	88.1	99.3
			SHC	91.7	105.0	118.3	88.2	101.0	113.9	84.5	96.8	109.0	80.5	92.1	103.8	76.9	88.1	99.3
		62	THC	105.1	105.1	122.9	101.1	101.1	118.2	96.8	96.8	113.2	92.2	92.2	107.8	85.5	85.5	100.0
			SHC	87.3	105.1	122.9	84.0	101.1	118.2	80.4	96.8	113.2	76.6	92.2	107.8	71.1	85.5	100.0
		67	THC	107.1	107.1	120.5	102.6	102.6	118.3	97.8	97.8	115.8	92.7	92.7	112.8	-	-	-
	SHC		74.1	97.3	120.5	72.2	95.3	118.3	70.1	93.0	115.8	67.8	90.3	112.8	-	-	-	
	72	THC	114.9	114.9	114.9	109.9	109.9	109.9	104.6	104.6	104.6	98.9	98.9	98.9	-	-	-	
		SHC	50.1	73.4	96.7	48.4	71.6	94.8	46.5	69.6	92.7	44.6	67.5	90.5	-	-	-	
	76	THC	-	121.4	121.4	-	116.2	116.2	-	110.4	110.4	-	104.7	104.7	-	-	-	
		SHC	-	54.2	77.5	-	52.4	75.6	-	50.5	73.4	-	48.5	71.1	-	-	-	

- Not Operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS121 & FAS120

COMBINATION RATINGS

			AMBIENT TEMPERATURE															
			85			95			105			115			125			
			EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)			
			75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
3000 Cfm	EA (wB)	58	THC	110.5	110.5	121.5	106.2	106.2	117.1	101.6	101.6	112.4	96.9	96.9	107.5	92.5	92.5	102.9
		SHC	99.4	110.5	121.5	95.3	106.2	117.1	90.9	101.6	112.4	86.3	96.9	107.5	82.0	92.5	102.9	
	62	THC	114.0	114.0	114.0	108.8	108.8	111.4	103.3	103.3	108.7	97.6	97.6	105.6	91.2	91.2	101.6	
		SHC	92.3	103.2	114.0	89.9	100.6	111.4	87.3	98.0	108.7	84.5	95.1	105.6	80.8	91.2	101.6	
	67	THC	123.2	123.2	123.2	117.4	117.4	117.4	111.5	111.5	111.5	105.1	105.1	105.1	-	-	-	
		SHC	76.4	86.8	97.2	74.1	84.4	94.7	71.7	81.9	92.1	69.1	79.3	89.4	-	-	-	
	72	THC	133.0	133.0	133.0	126.8	126.8	126.8	120.4	120.4	120.4	113.5	113.5	113.5	106.0	106.0	106.0	
		SHC	60.2	70.1	79.9	57.9	67.7	77.5	55.6	65.3	74.9	53.2	62.7	72.3	50.5	60.0	69.4	
	76	THC	-	140.7	140.7	-	134.2	134.2	-	127.6	127.6	-	120.2	120.2	-	112.3	112.3	
		SHC	-	56.4	65.8	-	54.1	63.4	-	51.8	61.0	-	49.3	58.4	-	46.6	55.6	
3500 Cfm	EA (wB)	58	THC	115.8	115.8	128.4	111.2	111.2	123.6	106.3	106.3	118.6	101.1	101.1	113.2	94.3	94.3	106.2
		SHC	103.3	115.8	128.4	98.8	111.2	123.6	94.1	106.3	118.6	89.0	101.1	113.2	82.5	94.3	106.2	
	62	THC	117.4	117.4	124.5	112.0	112.0	121.6	106.6	106.6	118.3	101.1	101.1	113.2	93.0	93.0	104.8	
		SHC	99.5	112.0	124.5	96.9	109.2	121.6	93.8	106.0	118.3	89.0	101.1	113.2	81.2	93.0	104.8	
	67	THC	126.1	126.1	126.1	120.0	120.0	120.0	113.8	113.8	113.8	107.2	107.2	107.2	101.0	101.0	101.0	
		SHC	81.5	93.4	105.4	79.1	91.0	102.8	76.7	88.4	100.2	74.1	85.8	97.4	71.6	83.2	94.7	
	72	THC	135.6	135.6	135.6	129.2	129.2	129.2	122.6	122.6	122.6	115.5	115.5	115.5	108.0	108.0	108.0	
		SHC	62.8	74.1	85.4	60.5	71.7	82.9	58.2	69.3	80.4	55.7	66.7	77.7	53.2	64.0	74.9	
	76	THC	-	143.2	143.2	-	136.5	136.5	-	129.7	129.7	-	122.1	122.1	-	-	-	
		SHC	-	58.4	69.2	-	56.1	66.8	-	53.8	64.4	-	51.3	61.8	-	-	-	
4000 Cfm	EA (wB)	58	THC	120.2	120.2	134.3	115.3	115.3	129.2	110.1	110.1	123.8	104.5	104.5	118.0	97.1	97.1	110.4
		SHC	106.1	120.2	134.3	101.4	115.3	129.2	96.4	110.1	123.8	91.0	104.5	118.0	83.9	97.1	110.4	
	62	THC	120.5	120.5	133.7	115.3	115.3	129.2	110.2	110.2	123.9	104.6	104.6	118.1	97.0	97.0	110.3	
		SHC	105.6	119.7	133.7	101.4	115.3	129.2	96.5	110.2	123.9	91.1	104.6	118.1	83.8	97.0	110.3	
	67	THC	128.2	128.2	128.2	122.0	122.0	122.0	115.6	115.6	115.6	108.8	108.8	108.8	101.3	101.3	102.0	
		SHC	86.2	99.7	113.2	83.9	97.2	110.6	81.4	94.7	108.0	78.8	92.0	105.1	76.0	89.0	102.0	
	72	THC	137.6	137.6	137.6	131.0	131.0	131.0	124.2	124.2	124.2	116.9	116.9	116.9	109.3	109.3	109.3	
		SHC	65.2	78.0	90.7	62.9	75.6	88.2	60.6	73.1	85.7	58.1	70.6	83.0	55.6	67.8	80.1	
	76	THC	-	145.0	145.0	-	138.2	138.2	-	131.2	131.2	-	-	-	-	-	-	
		SHC	-	60.3	72.5	-	58.1	70.1	-	55.8	67.7	-	-	-	-	-	-	
4500 Cfm	EA (wB)	58	THC	123.8	123.8	139.3	118.6	118.6	134.0	113.2	113.2	128.4	107.3	107.3	122.2	102.3	102.3	117.1
		SHC	108.2	123.8	139.3	103.2	118.6	134.0	98.0	113.2	128.4	92.4	107.3	122.2	87.6	102.3	117.1	
	62	THC	123.9	123.9	139.4	118.7	118.7	134.1	113.3	113.3	128.4	107.4	107.4	122.3	101.8	101.8	116.5	
		SHC	108.3	123.9	139.4	103.3	118.7	134.1	98.1	113.3	128.4	92.5	107.4	122.3	87.1	101.8	116.5	
	67	THC	130.0	130.0	130.0	123.6	123.6	123.6	117.1	117.1	117.1	110.2	110.2	112.5	102.8	102.8	109.3	
		SHC	90.8	105.8	120.9	88.3	103.2	118.2	85.8	100.6	115.4	83.2	97.8	112.5	80.3	94.8	109.3	
	72	THC	139.1	139.1	139.1	132.4	132.4	132.4	125.5	125.5	125.5	118.1	118.1	118.1	110.3	110.3	110.3	
		SHC	67.4	81.7	95.9	65.2	79.3	93.3	62.9	76.8	90.8	60.4	74.2	88.1	57.8	71.5	85.2	
	76	THC	-	146.4	146.4	-	139.6	139.6	-	-	-	-	-	-	-	-	-	
		SHC	-	62.2	75.7	-	59.9	73.3	-	-	-	-	-	-	-	-	-	
5000 Cfm	EA (wB)	58	THC	126.8	126.8	143.8	121.4	121.4	138.2	115.8	115.8	132.3	109.8	109.8	126.1	103.0	103.0	119.1
		SHC	109.8	126.8	143.8	104.5	121.4	138.2	99.2	115.8	132.3	93.4	109.8	126.1	86.9	103.0	119.1	
	62	THC	126.9	126.9	143.9	121.4	121.4	138.2	115.9	115.9	132.4	109.8	109.8	126.2	103.1	103.1	119.2	
		SHC	109.8	126.9	143.9	104.6	121.4	138.2	99.3	115.9	132.4	93.5	109.8	126.2	87.0	103.1	119.2	
	67	THC	131.4	131.4	131.4	125.0	125.0	125.5	118.4	118.4	122.7	111.5	111.5	119.6	104.1	104.1	116.1	
		SHC	95.1	111.7	128.2	92.6	109.1	125.5	90.1	106.4	122.7	87.3	103.4	119.6	84.2	100.1	116.1	
	72	THC	140.3	140.3	140.3	133.5	133.5	133.5	126.6	126.6	126.6	119.0	119.0	119.0	111.1	111.1	111.1	
		SHC	69.6	85.3	100.9	67.4	82.9	98.4	65.1	80.5	95.9	62.6	77.9	93.2	60.0	75.1	90.3	
	76	THC	-	147.6	147.6	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	64.0	78.8	-	-	-	-	-	-	-	-	-	-	-	-	

- Not operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS121 & FAS150

COMBINATION RATINGS

			AMBIENT TEMPERATURE															
			85			95			105			115			125			
			EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)			
			75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
3750 Cfm	EA (WB)	58	THC	119.7	119.7	132.9	115.2	115.2	128.3	110.5	110.5	123.4	105.3	105.3	118.0	97.9	97.9	110.4
			SHC	106.5	119.7	132.9	102.2	115.2	128.3	97.6	110.5	123.4	92.6	105.3	118.0	85.5	97.9	110.4
		62	THC	121.2	121.2	130.3	116.0	116.0	127.0	110.8	110.8	122.9	105.4	105.4	118.1	98.7	98.7	111.1
			SHC	104.0	117.2	130.3	101.0	114.0	127.0	97.2	110.1	122.9	92.7	105.4	118.1	86.2	98.7	111.1
		67	THC	130.0	130.0	130.0	124.4	124.4	124.4	118.5	118.5	118.5	112.0	112.0	112.0	104.9	104.9	104.9
	SHC		85.3	97.8	110.3	83.1	95.5	108.0	80.8	93.1	105.5	78.3	90.5	102.7	75.6	87.7	99.8	
	72	THC	139.4	139.4	139.4	133.7	133.7	133.7	127.7	127.7	127.7	120.9	120.9	120.9	113.5	113.5	113.5	
		SHC	65.3	77.1	88.8	63.3	75.0	86.7	61.2	72.8	84.4	58.9	70.4	81.8	56.3	67.7	79.0	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4300 Cfm	EA (WB)	58	THC	124.1	124.1	138.8	119.4	119.4	134.1	114.5	114.5	128.9	109.0	109.0	123.2	100.5	100.5	114.4
			SHC	109.2	124.1	138.8	104.8	119.4	134.1	100.0	114.5	128.9	94.8	109.0	123.2	86.6	100.5	114.4
		62	THC	124.5	124.5	138.3	119.5	119.5	134.1	114.5	114.5	128.9	109.1	109.1	123.3	101.0	101.0	114.9
			SHC	108.7	123.5	138.3	104.9	119.5	134.1	100.1	114.5	128.9	94.9	109.1	123.3	87.1	101.0	114.9
		67	THC	132.1	132.1	132.1	126.4	126.4	126.4	120.4	120.4	121.1	113.8	113.8	115.6	106.5	106.5	109.5
	SHC		90.7	104.9	119.0	88.5	102.5	116.6	86.1	100.1	114.1	83.6	97.4	111.2	80.7	94.5	108.1	
	72	THC	141.3	141.3	141.3	135.5	135.5	135.5	129.5	129.5	129.5	122.6	122.6	122.6	114.3	114.3	114.3	
		SHC	68.1	81.4	94.7	66.1	79.3	92.6	64.0	77.1	90.3	61.7	74.7	87.7	57.6	69.7	81.7	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5000 Cfm	EA (WB)	58	THC	128.9	128.9	145.7	124.1	124.1	140.7	118.9	118.9	135.3	113.2	113.2	129.3	106.8	106.8	122.7
			SHC	112.1	128.9	145.7	107.5	124.1	140.7	102.5	118.9	135.3	97.0	113.2	129.3	90.9	106.8	122.7
		62	THC	129.0	129.0	145.8	124.2	124.2	140.7	119.0	119.0	135.3	113.3	113.3	129.4	106.8	106.8	122.7
			SHC	112.2	129.0	145.8	107.6	124.2	140.7	102.6	119.0	135.3	97.1	113.3	129.4	91.0	106.8	122.7
		67	THC	134.4	134.4	134.4	128.6	128.6	128.6	122.5	122.5	124.7	115.8	115.8	121.8	108.4	108.4	118.5
	SHC		97.3	113.6	129.8	95.1	111.2	127.4	92.7	108.7	124.7	90.1	105.9	121.8	87.0	102.8	118.5	
	72	THC	143.4	143.4	143.4	137.5	137.5	137.5	131.3	131.3	131.3	124.3	124.3	124.3	-	-	-	
		SHC	71.6	86.8	102.0	69.6	84.7	99.9	67.5	82.6	97.6	65.2	80.1	95.0	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5700 Cfm	EA (WB)	58	THC	132.3	132.3	151.0	127.3	127.3	145.8	122.0	122.0	140.3	116.1	116.1	134.1	109.5	109.5	127.2
			SHC	113.6	132.3	151.0	108.8	127.3	145.8	103.7	122.0	140.3	98.1	116.1	134.1	91.8	109.5	127.2
		62	THC	132.4	132.4	151.1	127.4	127.4	145.9	122.1	122.1	140.3	116.2	116.2	134.2	109.5	109.5	127.3
			SHC	113.7	132.4	151.1	108.9	127.4	145.9	103.8	122.1	140.3	98.1	116.2	134.2	91.8	109.5	127.3
		67	THC	136.0	136.0	141.8	130.2	130.2	137.7	124.1	124.1	134.2	117.4	117.4	130.6	110.3	110.3	125.5
	SHC		103.2	121.5	139.8	100.8	119.0	137.2	98.1	116.1	134.2	94.9	112.7	130.6	90.2	107.8	125.5	
	72	THC	144.7	144.7	144.7	138.8	138.8	138.8	132.0	132.0	140.6	126.0	126.0	133.0	-	-	-	
		SHC	74.8	92.0	109.1	72.8	89.9	107.0	71.4	88.0	81.8	68.7	85.2	101.8	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6250 Cfm	EA (WB)	58	THC	134.9	134.9	155.1	129.8	129.8	149.8	124.4	124.4	144.2	118.3	118.3	137.8	111.6	111.6	130.8
			SHC	114.7	134.9	155.1	109.9	129.8	149.8	104.7	124.4	144.2	98.9	118.3	137.8	92.5	111.6	130.8
		62	THC	135.0	135.0	155.2	129.9	129.9	149.9	124.5	124.5	144.2	118.4	118.4	137.9	111.7	111.7	130.9
			SHC	114.8	135.0	155.2	109.9	129.9	149.9	104.7	124.5	144.2	98.9	118.4	137.9	92.5	111.7	130.9
		67	THC	137.2	137.2	147.6	131.4	131.4	144.9	125.3	125.3	141.6	118.7	118.7	137.5	111.8	111.8	131.0
	SHC		107.8	127.7	147.6	105.3	125.1	144.9	102.4	122.0	141.6	98.6	118.1	137.5	92.7	111.8	131.0	
	72	THC	145.7	145.7	145.7	139.9	139.9	139.9	-	-	-	-	-	-	-	-	-	
		SHC	77.3	96.0	114.7	75.4	94.0	112.6	-	-	-	-	-	-	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Not operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS120 & FAS120

COMBINATION RATINGS

				AMBIENT TEMPERATURE														
				85			95			105			115			125		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
3000 Cfm	EA (WB)	58	THC	111.6	111.6	125.3	107.3	107.3	120.5	102.6	102.6	115.2	97.3	97.3	109.4	91.7	91.7	103.0
			SHC	97.9	111.6	125.3	94.1	107.3	120.5	89.9	102.6	115.2	85.3	97.3	109.4	80.3	91.7	103.0
		62	THC	115.9	115.9	119.8	110.5	110.5	117.1	104.8	104.8	114.2	98.3	98.3	110.7	92.4	92.4	106.2
			SHC	88.6	104.2	119.8	86.0	101.5	117.1	83.2	98.7	114.2	79.9	95.3	110.7	76.2	91.2	106.2
		67	THC	125.6	125.6	125.6	119.9	119.9	119.9	113.7	113.7	113.7	107.1	107.1	107.1	99.6	99.6	99.6
	SHC		71.9	87.6	103.3	69.4	85.1	100.8	66.8	82.5	98.1	63.9	79.6	95.3	60.8	76.5	92.2	
	72	THC	135.6	135.6	135.6	129.6	129.6	129.6	123.1	123.1	123.1	116.1	116.1	116.1	108.4	108.4	108.4	
		SHC	55.0	70.8	86.6	52.6	68.4	84.2	50.1	65.9	81.7	47.4	63.2	79.0	44.5	60.3	76.1	
	76	THC	-	143.6	143.6	-	137.4	137.4	-	130.7	130.7	-	123.3	123.3	-	115.2	115.2	
		SHC	-	57.3	73.6	-	55.1	71.4	-	52.7	68.9	-	50.1	66.2	-	47.4	63.4	
3500 Cfm	EA (WB)	58	THC	117.1	117.1	131.6	112.5	112.5	126.4	107.5	107.5	120.8	102.0	102.0	114.7	95.7	95.7	107.7
			SHC	102.6	117.1	131.6	98.6	112.5	126.4	94.2	107.5	120.8	89.4	102.0	114.7	83.8	95.7	107.7
		62	THC	119.3	119.3	130.8	113.8	113.8	127.8	108.1	108.1	123.7	102.1	102.1	119.1	95.7	95.7	111.7
			SHC	95.1	112.9	130.8	92.3	110.0	127.8	88.9	106.3	123.7	85.1	102.1	119.1	79.7	95.7	111.7
		67	THC	128.8	128.8	128.8	122.8	122.8	122.8	116.4	116.4	116.4	109.5	109.5	109.5	101.9	101.9	101.9
	SHC		76.0	94.1	112.2	73.5	91.6	109.7	70.8	88.9	107.0	68.0	86.1	104.2	64.9	82.9	101.0	
	72	THC	138.6	138.6	138.6	132.5	132.5	132.5	125.8	125.8	125.8	118.4	118.4	118.4	110.5	110.5	110.5	
		SHC	56.5	74.8	93.0	54.2	72.4	90.6	51.7	69.9	88.1	48.9	67.1	85.3	46.0	64.2	82.4	
	76	THC	-	146.6	146.6	-	140.2	140.2	-	133.2	133.2	-	125.6	125.6	-	-	-	
		SHC	-	59.4	78.0	-	57.1	75.7	-	54.7	73.3	-	52.2	70.6	-	-	-	
4000 Cfm	EA (WB)	58	THC	121.6	121.6	136.6	116.7	116.7	131.2	111.4	111.4	125.3	105.7	105.7	118.9	99.2	99.2	111.7
			SHC	106.5	121.6	136.6	102.2	116.7	131.2	97.6	111.4	125.3	92.5	105.7	118.9	86.8	99.2	111.7
		62	THC	122.2	122.2	140.3	117.0	117.0	135.6	111.4	111.4	130.0	105.7	105.7	123.4	99.2	99.2	115.9
			SHC	100.7	120.5	140.3	97.0	116.3	135.6	92.8	111.4	130.0	88.0	105.7	123.4	82.6	99.2	115.9
		67	THC	131.1	131.1	131.1	125.0	125.0	125.0	118.5	118.5	118.5	111.4	111.4	112.6	103.7	103.7	109.4
	SHC		79.9	100.4	120.8	77.4	97.8	118.3	74.7	95.1	115.6	71.8	92.2	112.6	68.7	89.0	109.4	
	72	THC	140.9	140.9	140.9	134.6	134.6	134.6	127.7	127.7	127.7	120.3	120.3	120.3	112.1	112.1	112.1	
		SHC	57.9	78.6	99.2	55.6	76.2	96.8	53.1	73.7	94.2	50.4	70.9	91.5	47.5	68.0	88.5	
	76	THC	-	148.8	148.8	-	142.3	142.3	-	135.2	135.2	-	-	-	-	-	-	
		SHC	-	61.3	82.2	-	59.1	80.0	-	56.7	77.5	-	-	-	-	-	-	
4500 Cfm	EA (WB)	58	THC	125.3	125.3	140.9	120.2	120.2	135.3	114.8	114.8	129.1	108.8	108.8	122.4	102.4	102.4	115.2
			SHC	109.7	125.3	140.9	105.2	120.2	135.3	100.4	114.8	129.1	95.2	108.8	122.4	89.5	102.4	115.2
		62	THC	125.3	125.3	146.2	120.2	120.2	140.3	114.7	114.7	134.0	108.8	108.8	127.1	102.4	102.4	119.6
			SHC	104.4	125.3	146.2	100.1	120.2	140.3	95.5	114.7	134.0	90.5	108.8	127.1	85.1	102.4	119.6
		67	THC	133.0	133.0	133.0	126.8	126.8	126.8	120.1	120.1	123.8	112.9	112.9	120.7	105.1	105.1	117.3
	SHC		83.6	106.4	129.2	81.1	103.8	126.6	78.3	101.0	123.8	75.4	98.0	120.7	72.2	94.8	117.3	
	72	THC	142.8	142.8	142.8	136.3	136.3	136.3	129.3	129.3	129.3	121.7	121.7	121.7	113.3	113.3	113.3	
		SHC	59.3	82.2	105.1	57.0	79.9	102.8	54.4	77.3	100.2	51.7	74.6	97.5	48.8	71.6	94.5	
	76	THC	-	150.5	150.5	-	143.9	143.9	-	-	-	-	-	-	-	-	-	
		SHC	-	63.1	86.4	-	60.9	84.1	-	-	-	-	-	-	-	-	-	
5000 Cfm	EA (WB)	58	THC	128.4	128.4	144.5	123.2	123.2	138.7	117.6	117.6	132.3	111.4	111.4	125.4	104.7	104.7	117.9
			SHC	112.4	128.4	144.5	107.8	123.2	138.7	102.8	117.6	132.3	97.4	111.4	125.4	91.5	104.7	117.9
		62	THC	128.4	128.4	149.9	123.2	123.2	143.9	117.5	117.5	137.3	111.4	111.4	130.2	104.7	104.7	122.4
			SHC	106.9	128.4	149.9	102.5	123.2	143.9	97.8	117.5	137.3	92.6	111.4	130.2	87.0	104.7	122.4
		67	THC	134.6	134.6	137.2	128.3	128.3	134.5	121.5	121.5	131.6	114.2	114.2	128.3	106.3	106.3	124.6
	SHC		87.1	112.2	137.2	84.6	109.5	134.5	81.8	106.7	131.6	78.8	103.6	128.3	75.5	100.1	124.6	
	72	THC	144.2	144.2	144.2	137.7	137.7	137.7	130.6	130.6	130.6	122.8	122.8	122.8	114.4	114.4	114.4	
		SHC	60.6	85.8	111.0	58.3	83.5	108.6	55.8	80.9	106.1	53.0	78.2	103.3	50.1	75.2	100.3	
	76	THC	-	151.9	151.9	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	64.9	90.4	-	-	-	-	-	-	-	-	-	-	-	-	

- Not operational
 THC - Total Cooling Capacity, Gross (1,000 Btuh)
 SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS151 & FAS180

COMBINATION RATINGS

		AMBIENT TEMPERATURE																
		85			95			105			115			125				
		EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)				
		75	80	85	75	80	85	75	80	85	75	80	85	75	80	85		
4500 Cfm	EA (WB)	58	THC	149.9	149.9	166.0	144.0	144.0	160.0	137.7	137.7	153.4	130.8	130.8	146.3	122.9	122.9	138.1
			SHC	133.8	149.9	166.0	128.1	144.0	160.0	122.0	137.7	153.4	115.3	130.8	146.3	107.8	122.9	138.1
		62	THC	152.8	152.8	160.5	145.8	145.8	156.7	138.6	138.6	152.1	131.1	131.1	146.5	122.0	122.0	137.1
			SHC	128.7	144.6	160.5	125.2	141.0	156.7	120.8	136.5	152.1	115.6	131.1	146.5	106.8	122.0	137.1
		67	THC	164.6	164.6	164.6	157.1	157.1	157.1	149.0	149.0	149.0	140.3	140.3	140.3	-	-	-
	SHC		105.8	120.9	136.1	102.8	117.8	132.9	99.7	114.5	129.5	96.2	111.0	125.8	-	-	-	
	72	THC	176.9	176.9	176.9	169.1	169.1	169.1	160.6	160.6	160.6	151.4	151.4	151.4	-	-	-	
		SHC	81.9	96.2	110.5	79.1	93.3	107.5	76.1	90.1	104.2	72.9	86.7	100.7	-	-	-	
	76	THC	-	187.1	187.1	-	179.0	179.0	-	169.7	169.7	-	-	-	-	-	-	
		SHC	-	76.2	89.7	-	73.4	86.9	-	69.9	82.9	-	-	-	-	-	-	
5300 Cfm	EA (WB)	58	THC	156.6	156.6	175.0	150.4	150.4	168.6	143.7	143.7	161.7	136.4	136.4	154.1	124.7	124.7	141.2
			SHC	138.2	156.6	175.0	132.2	150.4	168.6	125.8	143.7	161.7	118.8	136.4	154.1	108.2	124.7	141.2
		62	THC	157.6	157.6	173.5	150.7	150.7	168.8	143.8	143.8	161.7	136.5	136.5	154.2	125.1	125.1	141.6
			SHC	136.9	155.2	173.5	132.5	150.7	168.8	125.9	143.8	161.7	118.9	136.5	154.2	108.6	125.1	141.6
		67	THC	167.9	167.9	167.9	160.2	160.2	160.2	151.8	151.8	152.2	142.9	142.9	144.4	-	-	-
	SHC		113.4	131.0	148.5	110.5	127.9	145.3	107.3	124.5	141.7	103.8	120.9	138.0	-	-	-	
	72	THC	180.2	180.2	180.2	172.1	172.1	172.1	163.4	163.4	163.4	153.9	153.9	153.9	-	-	-	
		SHC	85.9	102.4	118.8	83.1	99.5	115.8	80.1	96.3	112.5	76.9	92.9	109.0	-	-	-	
	76	THC	-	189.4	189.4	-	181.2	181.2	-	-	-	-	-	-	-	-	-	
		SHC	-	78.2	93.1	-	75.5	90.3	-	-	-	-	-	-	-	-	-	
6000 Cfm	EA (WB)	58	THC	161.3	161.3	181.5	154.9	154.9	174.9	147.8	147.8	167.6	140.3	140.3	159.7	-	-	-
			SHC	141.1	161.3	181.5	134.9	154.9	174.9	128.1	147.8	167.6	120.9	140.3	159.7	-	-	-
		62	THC	161.7	161.7	181.1	155.0	155.0	175.0	148.0	148.0	167.7	140.4	140.4	159.8	-	-	-
			SHC	140.7	160.9	181.1	135.0	155.0	175.0	128.2	148.0	167.7	121.0	140.4	159.8	-	-	-
		67	THC	170.1	170.1	170.1	162.3	162.3	162.3	153.8	153.8	155.1	144.7	144.7	149.9	-	-	-
	SHC		119.6	139.1	158.6	116.6	136.0	155.3	113.3	132.5	151.6	109.7	128.7	147.7	-	-	-	
	72	THC	182.3	182.3	182.3	174.1	174.1	174.1	165.2	165.2	165.2	155.4	155.4	155.4	-	-	-	
		SHC	89.1	107.4	125.7	86.3	104.5	122.7	83.3	101.3	119.4	80.1	97.9	115.8	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6800 Cfm	EA (WB)	58	THC	166.2	166.2	188.7	159.5	159.5	181.8	152.2	152.2	174.2	144.3	144.3	165.9	-	-	-
			SHC	143.6	166.2	188.7	137.2	159.5	181.8	130.2	152.2	174.2	122.6	144.3	165.9	-	-	-
		62	THC	166.3	166.3	188.8	159.6	159.6	181.9	152.3	152.3	174.3	144.4	144.4	166.0	-	-	-
			SHC	143.8	166.3	188.8	137.4	159.6	181.9	130.3	152.3	174.3	122.7	144.4	166.0	-	-	-
		67	THC	172.4	172.4	175.3	164.5	164.5	169.2	155.9	155.9	163.4	146.7	146.7	159.1	-	-	-
	SHC		126.9	148.8	170.7	123.8	145.5	167.3	120.3	141.9	163.4	116.3	137.6	159.1	-	-	-	
	72	THC	184.4	184.4	184.4	176.1	176.1	176.1	167.0	167.0	167.0	157.1	157.1	157.1	-	-	-	
		SHC	93.0	113.5	134.1	90.2	110.6	131.1	87.2	107.5	127.8	84.0	104.1	124.2	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7500 Cfm	EA (WB)	58	THC	170.1	170.1	194.7	163.2	163.2	187.6	155.7	155.7	179.7	147.5	147.5	171.2	-	-	-
			SHC	145.4	170.1	194.7	138.8	163.2	187.6	131.6	155.7	179.7	123.8	147.5	171.2	-	-	-
		62	THC	170.2	170.2	194.8	163.3	163.3	187.7	155.8	155.8	179.8	147.6	147.6	171.3	-	-	-
			SHC	145.6	170.2	194.8	139.0	163.3	187.7	131.7	155.8	179.8	123.9	147.6	171.3	-	-	-
		67	THC	174.3	174.3	181.8	166.3	166.3	178.1	157.7	157.7	174.0	148.4	148.4	169.1	-	-	-
	SHC		133.4	157.6	181.8	130.1	154.1	178.1	126.4	150.2	174.0	122.0	145.5	169.1	-	-	-	
	72	THC	186.0	186.0	186.0	177.6	177.6	177.6	168.4	168.4	168.4	158.4	158.4	158.4	-	-	-	
		SHC	96.5	119.2	141.9	93.8	116.3	138.9	90.8	113.2	135.6	87.6	109.8	132.0	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Not operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS181 & FAS180

COMBINATION RATINGS

				AMBIENT TEMPERATURE																	
				85			95			105			115						125		
				EA (dB)			EA (dB)			EA (dB)			EA (dB)						EA (dB)		
				75	80	85	75	80	85	75	80	85	75	80	85				75	80	85
4500 Cfm	EA (WB)	58	THC	169.9	169.9	190.5	164.1	164.1	184.2	157.5	157.5	176.8	151.4	151.4	170.0	-	-	-			
			SHC	148.9	169.7	190.5	143.9	164.1	184.2	138.1	157.5	176.8	132.7	151.4	170.0	-	-	-			
		62	THC	178.8	178.8	178.8	171.5	171.5	174.3	163.3	163.3	170.5	155.3	155.3	166.3	146.7	146.7	161.9			
			SHC	133.1	155.4	177.8	129.5	151.9	174.3	125.7	148.1	170.5	121.7	144.0	166.3	117.4	139.7	161.9			
		72	THC	193.8	193.8	193.8	186.0	186.0	186.0	177.5	177.5	177.5	168.6	168.6	168.6	-	-	-			
SHC	108.6		130.7	152.8	105.2	127.4	149.5	101.6	123.8	146.0	97.8	120.1	142.4	-	-	-					
5250 Cfm	EA (WB)	58	THC	178.2	178.2	200.2	172.0	172.0	193.3	164.8	164.8	185.2	158.4	158.4	178.0	150.6	150.6	169.3			
			SHC	156.3	178.2	200.2	150.8	172.0	193.3	144.4	164.8	185.2	138.7	158.4	178.0	131.9	150.6	169.3			
		62	THC	184.0	184.0	193.8	176.0	176.0	189.8	167.6	167.6	185.5	159.7	159.7	180.7	151.0	151.0	174.3			
			SHC	142.4	168.1	193.8	138.5	164.1	189.8	134.4	160.0	185.5	130.1	155.4	180.7	124.8	149.6	174.3			
		72	THC	199.0	199.0	199.0	190.8	190.8	190.8	181.6	181.6	181.6	172.6	172.6	172.6	-	-	-			
SHC	114.5		140.0	165.6	111.0	136.6	162.2	107.2	132.9	158.6	103.5	129.2	154.9	-	-	-					
6000 Cfm	EA (WB)	58	THC	185.2	185.2	208.1	178.7	178.7	200.8	170.9	170.9	192.2	164.2	164.2	184.6	156.1	156.1	175.6			
			SHC	162.2	185.2	208.1	156.5	178.7	200.8	149.6	170.9	192.2	143.7	164.2	184.6	136.6	156.1	175.6			
		62	THC	188.1	188.1	208.1	180.3	180.3	203.5	-	-	-	164.5	164.5	189.5	156.3	156.3	181.6			
			SHC	150.7	179.4	208.1	146.6	175.1	203.5	-	-	-	135.6	162.5	189.5	129.7	155.6	181.6			
		72	THC	203.1	203.1	203.1	194.6	194.6	194.6	185.6	185.6	185.6	175.8	175.8	175.8	-	-	-			
SHC	120.0		148.9	177.8	116.6	145.5	174.4	112.8	141.8	170.8	108.9	137.9	166.9	-	-	-					
6750 Cfm	EA (WB)	58	THC	191.0	191.0	214.8	184.2	184.2	207.2	176.6	176.6	198.6	169.0	169.0	190.1	160.6	160.6	180.7			
			SHC	167.3	191.0	214.8	161.2	184.2	207.2	154.5	176.6	198.6	147.8	169.0	190.1	140.5	160.6	180.7			
		62	THC	192.1	192.1	219.7	184.5	184.5	212.5	177.8	177.8	202.9	168.9	168.9	197.3	160.6	160.6	187.6			
			SHC	157.7	188.7	219.7	152.1	182.3	212.5	145.5	174.2	202.9	140.6	168.9	197.3	133.6	160.6	187.6			
		72	THC	206.4	206.4	206.4	197.7	197.7	197.7	188.2	188.2	188.2	178.4	178.4	178.5	-	-	-			
SHC	125.4		157.5	189.7	121.8	154.0	186.2	118.0	150.2	182.5	114.1	146.3	178.5	-	-	-					
7500 Cfm	EA (WB)	58	THC	222.5	222.5	222.5	213.1	213.1	213.1	203.1	203.1	203.1	192.4	192.4	192.4	-	-	-			
			SHC	91.1	122.7	154.3	87.7	119.4	151.1	84.0	115.8	147.5	80.2	112.1	144.0	-	-	-			
		62	THC	-	236.1	236.1	-	226.5	226.5	-	215.9	215.9	-	204.4	204.4	-	-	-			
			SHC	-	95.3	124.6	-	92.3	122.2	-	89.0	119.5	-	85.4	116.3	-	-	-			
		72	THC	196.0	196.0	220.5	189.0	189.0	212.6	181.2	181.2	204.0	173.1	173.1	194.8	-	-	-			
SHC	171.5		196.0	220.5	165.3	189.0	212.6	158.5	181.2	204.0	151.4	173.1	194.8	-	-	-					

- Not operational
 THC - Total Cooling Capacity, Gross (1,000 Btuh)
 SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

PERFORMANCE DATA (cont.)

CAS181 & FAS240

COMBINATION RATINGS

			AMBIENT TEMPERATURE															
			85			95			105			115			125			
			EA (dB)			EA (dB)			EA (dB)			EA (dB)			EA (dB)			
			75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
6000 Cfm	EA (WB)	58	THC	188.1	188.1	211.9	181.9	181.9	205.0	175.2	175.2	197.4	167.8	167.8	189.1	159.7	159.7	180.0
			SHC	164.2	188.1	211.9	158.8	181.9	205.0	153.0	175.2	197.4	146.5	167.8	189.1	139.4	159.7	180.0
		62	THC	189.5	189.5	216.5	182.5	182.5	212.0	175.4	175.4	205.1	168.0	168.0	196.4	159.8	159.8	186.9
			SHC	154.7	185.6	216.5	150.8	181.4	212.0	145.7	175.4	205.1	139.5	168.0	196.4	132.7	159.8	186.9
		67	THC	203.3	203.3	203.3	195.6	195.6	195.6	187.2	187.2	187.2	177.9	177.9	177.9	167.8	167.8	172.0
	SHC		123.2	154.9	186.5	120.1	151.7	183.3	116.7	148.3	179.9	113.0	144.6	176.1	109.0	140.5	172.0	
	72	THC	218.9	218.9	218.9	210.9	210.9	210.9	202.0	202.0	202.0	192.1	192.1	192.1	181.3	181.3	181.3	
		SHC	90.2	122.0	153.8	87.2	119.0	150.8	84.0	115.8	147.5	80.5	112.2	143.9	76.7	108.3	140.0	
	76	THC	-	232.4	232.4	-	224.0	224.0	-	214.7	214.7	-	-	-	-	-	-	
		SHC	-	95.8	128.2	-	92.9	125.2	-	89.8	122.0	-	-	-	-	-	-	
7000 Cfm	EA (WB)	58	THC	195.8	195.8	220.6	189.4	189.4	213.4	182.3	182.3	205.4	174.5	174.5	196.6	165.8	165.8	186.9
			SHC	171.0	195.8	220.6	165.3	189.4	213.4	159.1	182.3	205.4	152.4	174.5	196.6	144.8	165.8	186.9
		62	THC	196.0	196.0	229.2	189.5	189.5	221.6	182.4	182.4	213.3	174.6	174.6	204.2	166.0	166.0	194.1
			SHC	162.8	196.0	229.2	157.4	189.5	221.6	151.5	182.4	213.3	145.1	174.6	204.2	137.9	166.0	194.1
		67	THC	207.2	207.2	207.2	199.2	199.2	201.0	190.5	190.5	197.4	181.1	181.1	193.5	170.7	170.7	189.2
	SHC		131.3	167.8	204.3	128.1	164.6	201.0	124.6	161.0	197.4	120.9	157.2	193.5	116.8	153.0	189.2	
	72	THC	222.7	222.7	222.7	214.4	214.4	214.4	205.4	205.4	205.4	195.2	195.2	195.2	184.1	184.1	184.1	
		SHC	93.3	130.0	166.6	90.3	127.0	163.6	87.1	123.7	160.3	83.6	120.1	156.7	79.7	116.2	152.7	
	76	THC	-	236.5	236.5	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	100.0	137.1	-	-	-	-	-	-	-	-	-	-	-	-	
8000 Cfm	EA (WB)	58	THC	202.0	202.0	227.6	195.3	195.3	220.1	187.9	187.9	211.8	179.8	179.8	202.6	170.7	170.7	192.4
			SHC	176.4	202.0	227.6	170.5	195.3	220.1	164.1	187.9	211.8	157.0	179.8	202.6	149.1	170.7	192.4
		62	THC	202.1	202.1	236.4	195.4	195.4	228.5	188.0	188.0	219.9	179.9	179.9	210.4	170.8	170.8	199.8
			SHC	167.9	202.1	236.4	162.3	195.4	228.5	156.2	188.0	219.9	149.4	179.9	210.4	141.9	170.8	199.8
		67	THC	210.1	210.1	221.2	202.1	202.1	217.8	193.3	193.3	214.0	183.7	183.7	209.7	173.2	173.2	204.8
	SHC		138.9	180.0	221.2	135.7	176.7	217.8	132.2	173.1	214.0	128.3	169.0	209.7	124.0	164.4	204.8	
	72	THC	225.7	225.7	225.7	217.3	217.3	217.3	207.9	207.9	207.9	197.6	197.6	197.6	186.2	186.2	186.2	
		SHC	96.3	137.7	179.1	93.4	134.7	176.1	90.1	131.4	172.8	86.6	127.8	169.1	82.7	123.9	165.1	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9000 Cfm	EA (WB)	58	THC	207.1	207.1	233.4	200.2	200.2	225.6	192.6	192.6	217.0	184.1	184.1	207.4	174.8	174.8	196.9
			SHC	180.8	207.1	233.4	174.8	200.2	225.6	168.2	192.6	217.0	160.7	184.1	207.4	152.6	174.8	196.9
		62	THC	207.2	207.2	242.3	200.3	200.3	234.2	192.7	192.7	225.3	184.2	184.2	215.4	174.9	174.9	204.5
			SHC	172.1	207.2	242.3	166.4	200.3	234.2	160.1	192.7	225.3	153.0	184.2	215.4	145.3	174.9	204.5
		67	THC	212.6	212.6	237.2	204.5	204.5	233.5	195.6	195.6	229.3	186.0	186.0	224.4	175.5	175.5	217.9
	SHC		146.2	191.7	237.2	142.9	188.2	233.5	139.2	184.3	229.3	135.1	179.7	224.4	130.1	174.0	217.9	
	72	THC	228.0	228.0	228.0	219.4	219.4	219.4	209.9	209.9	209.9	199.5	199.5	199.5	187.9	187.9	187.9	
		SHC	99.2	145.3	191.4	96.3	142.3	188.3	93.0	139.0	184.9	89.5	135.4	181.2	85.6	131.4	177.2	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10,000 Cfm	EA (WB)	58	THC	211.4	211.4	238.2	204.3	204.3	230.2	196.4	196.4	221.4	187.8	187.8	211.6	178.1	178.1	200.7
			SHC	184.6	211.4	238.2	178.4	204.3	230.2	171.5	196.4	221.4	164.0	187.8	211.6	155.5	178.1	200.7
		62	THC	211.5	211.5	247.3	204.4	204.4	239.0	196.6	196.6	229.8	187.9	187.9	219.7	178.2	178.2	208.3
			SHC	175.7	211.5	247.3	169.8	204.4	239.0	163.3	196.6	229.8	156.1	187.9	219.7	148.0	178.2	208.3
		67	THC	214.6	214.6	251.9	206.6	206.6	247.8	197.8	197.8	242.7	188.2	188.2	235.9	178.3	178.3	223.5
	SHC		152.9	202.4	251.9	149.4	198.6	247.8	145.4	194.0	242.7	140.5	188.2	235.9	133.1	178.3	223.5	
	72	THC	229.9	229.9	229.9	221.2	221.2	221.2	211.6	211.6	211.6	201.0	201.0	201.0	-	-	-	
		SHC	102.1	152.7	203.3	99.1	149.7	200.2	95.9	146.4	196.9	92.3	142.7	193.1	-	-	-	
	76	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Not operational

THC - Total Cooling Capacity, Gross (1,000 Btuh)

SHC - Sensible Cooling Capacity, Gross (1,000 Btuh)

ELECTRICAL DATA

CAS072 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	WATTS	FLA	MCA	Fuse
230-3-60	187	253	19	123	325	1.5	26.8	45
460-3-60	414	506	9.7	62	325	0.8	13.7	20
575-3-60	518	633	7.4	50	325	0.6	10.7	15

CAS091 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	WATTS	FLA	MCA	Fuse
230-3-60	187	253	25	164	325	1.5	34.23	50
460-3-60	414	506	12.2	100	325	0.8	16.9	25
575-3-60	518	633	9.0	78	325	0.6	12.7	20

CAS121 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	WATTS	FLA	MCA	Fuse
230-3-60	187	253	30.1	225	325	1.5	40.6	60
460-3-60	414	506	16.7	114	325	0.8	22.5	30
575-3-60	518	633	12.2	80	325	0.7	16.7	25

CAS120 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	MCA	Fuse
208/230-3-60	187	253	15.9	110	15.9	110	325	1.5	38.8	50
460-3-60	414	506	7.7	52	7.7	52	325	0.8	18.9	25
575-3-60	518	633	5.7	39	5.7	39	325	0.7	14.2	20

CAS151 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	WATTS	FLA	MCA	Fuse
230-3-60	187	253	48.1	245	325	1.5	63.1	80
460-3-60	414	506	18.6	125	325	0.8	24.9	30
575-3-60	518	633	14.7	100	325	0.7	19.8	30

CAS150 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	MCA	Fuse
208/230-3-60	187	253	22.40	149	22.40	149	325	1.5	53.4	60
460-3-60	414	506	10.6	75	10.6	75	325	0.8	25.5	30
575-3-60	518	633	7.7	54	7.7	54	325	0.7	18.7	25

ELECTRICAL DATA (CONT.)

CAS181 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	MCA	Fuse
208/230-3-60	187	253	25	164	25	164	325	1.5	60.8	80
460-3-60	414	506	12.2	100	12.2	100	325	0.8	29.9	40
575-3-60	518	633	9	78	9	78	325	0.7	22.4	30

CAS180 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	MCA	Fuse
208/230-3-60	187	253	25	164	25	164	325	1.5	60.7	80
460-3-60	414	506	12.2	100	12.2	100	325	0.8	29.8	40
575-3-60	518	633	9	78	9	78	325	0.6	22.0	30

CAS241 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	MCA	Fuse
208/230-3-60	187	253	30.1	225	30.1	225	325	1.5	73.7	100
460-3-60	414	506	16.7	114	16.7	114	325	0.8	40.8	50
575-3-60	518	633	12.2	80	12.2	80	325	0.7	30.3	40

CAS240 COOLING WITHOUT POWERED CONVENIENCE OUTLET

V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		POWER SUPPLY	
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	MCA	Fuse
208/230-3-60	187	253	30.1	225	30.1	225	325	1.5	73.7	100
460-3-60	414	506	16.7	114	16.7	114	325	0.8	40.8	50
575-3-60	518	633	12.2	80	12.2	80	325	0.7	30.3	40

APPLICATION DATA

Operating limits

Maximum outdoor temperature	125°F
Minimum return-air temperature (FAS)	55°F
Maximum return-air temperature (FAS)	95°F
Range of acceptable saturation suction temperature	20°F to 50°F
Maximum discharge temperature	275°F
Minimum discharge superheat	60°F

NOTES:

1. Select air handler at no less than 300 cfm/ton (nominal condensing unit capacity).
2. Total combined draw of the field-supplied liquid line solenoid valve and air handler fan contactor must not exceed 22 va. If the specified va must be exceeded, use a remote relay to control the load.

MINIMUM OUTDOOR-AIR OPERATING TEMPERATURE

UNIT	MINIMUM OUTDOOR TEMP (F)	
	Std	With Motormaster® Control†
CAS072	35	-20
CAS091	35	
CAS121	35	
CAS151	35	
CAS181	35	
CAS240	35	
CAS120	35	
CAS150	35	
CAS180	35	
CAS240	35	

† Wind baffles (field-supplied and field-installed) are recommended for all units with Motormaster control. Refer to Low Ambient Temperature Control Installation Instructions for additional information.

Refrigerant Piping

Do not bury refrigerant piping underground.

It is recommended that the refrigerant piping for all commercial split systems include a liquid line solenoid valve, a liquid line filter drier and a sight glass.

For refrigerant lines longer than 75 lineal ft, a liquid line solenoid valve installed at the **indoor** unit and a suction accumulator are required. Refer to the Refrigerant Specialties Part Numbers table.

REFRIGERANT SPECIALTIES PART NUMBERS

LIQUID LINE SIZE (in.)	LIQUID LINE SOLENOID VALVE (LLSV)	LLSV COIL	SIGHT GLASS
3/8	1179871	1179874	1179879
1/2	1179872	1179874	1179877
5/8	1179873	1179874	1179878

NOTE: CAS120, 150, 180, 240 units require TWO sets of parts.

R-410A Filter Drier(s)

Model-Size CAS	Qty	Liquid Line OD	Desiccant Volume	Part Number Ref
072	1	3/8-in	8 cu. in.	1179492
091	1	1/2-in	16 cu. in.	1179538
121	1	1/2-in	16 cu. in.	1179538
151	1	5/8-in	16 cu. in.	1183798
181	1	5/8-in	30 cu. in.	1179552
241	1	5/8-in	30 cu. in.	1179592
120	2	3/8-in	8 cu. in.	1179492
150	2	1/2-in	16 cu. in.	1179538
180	2	1/2-in	16 cu. in.	1179538
240	2	1/2-in	16 cu. in.	1179538

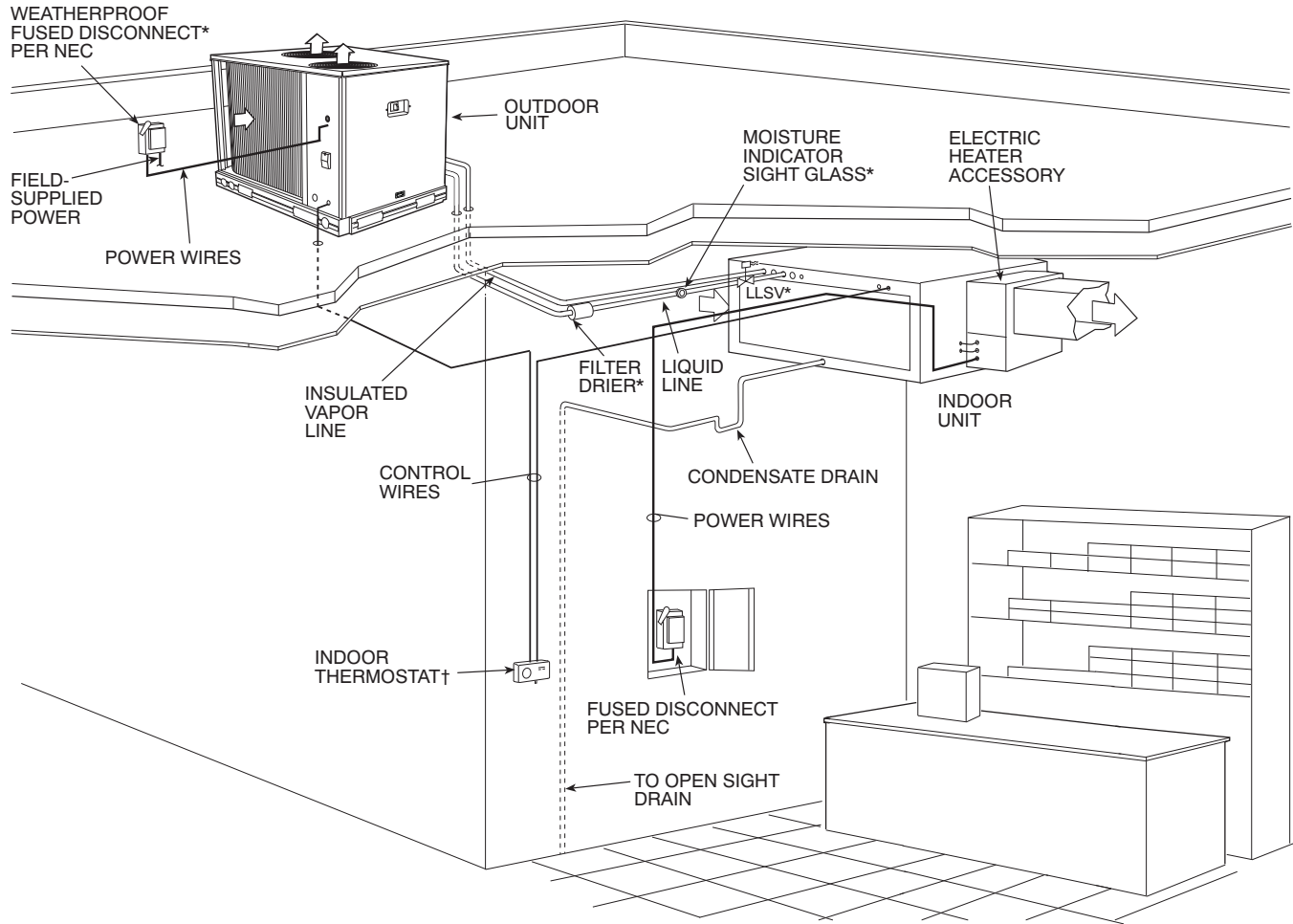
CAS072-151 PIPING RECOMMENDATIONS (SINGLE-CIRCUIT UNIT)

R-410A	Equivalent Length					
	Ft	0-38	38-75	75-113	113-150	150-188
	m	0-12	12-23	23-34	34-46	46-57
Model CAS	Linear Length					
	Ft	0-25	25-50	50-75	75-100	100-125
	m	0-8	8-15	15-23	23-30	30-38
072	Liquid Line	3/8	3/8 1/2	1/2	1/2 5/8	1/2 5/8
	Max Lift (ft)					
	RTPF	25	50 50	75	100 100	125 125
	Suction Line	7/8 7/8	7/8 1 1/8	1 1/8	1 1/8	1 1/8
091	Charge (lbs)					
	RTPF	14.0	15.2 16.7	18.6	20.6 24.4	22.5 28.2
	Liquid Line	1/2	1/2	1/2	1/2	1/2
	Max Lift (ft)					
RTPF	25	50	75	100	93	
Suction Line	7/8 1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	
Charge (lbs)						
RTPF	18.6	19.7	21.7	23.8	25.5	
121	Liquid Line	1/2	1/2	1/2 5/8	1/2 5/8	1/2 5/8
	Max Lift (ft)					
	RTPF	25	50	57 75	61 100	47 99
	Suction Line	1 1/8	1 1/8	1 1/8	1 1/8 1 3/8	1 1/8 1 3/8
Charge (lbs)						
RTPF	19.8	21.8	23.5 26.2	26.2 29.9	DNU 33.0	
151	Liquid Line	1/2	1/2 5/8	1/2 5/8	5/8 3/4	5/8 3/4
	Max Lift (ft)					
	RTPF	25	50 NR	75 NR	100 NR	125 NR
	Suction Line	1 1/8	1 1/8	1 3/8	1 3/8	1 3/8
Charge (lbs)						
RTPF	46.0	47.9 NR	50.4 NR	56.3 NR	59.3 NR	
181	Liquid Line	5/8	5/8	5/8	5/8	5/8
	Max Lift					
	RTPF	25	50	75	100	125
	Suction Line	1-1/8	1-3/8	1-3/8	1-3/8	1-3/8 1-5/8
Charge (lbs)						
RTPF	42.7	45.9	49.0	52.1	56.2	
241	Liquid Line	5/8	5/8	5/8	5/8	5/8
	Max Lift					
	RTPF	25	50	71	77	63
	Suction Line	1-1/8 1-3/8	1-3/8	1-3/8 1-5/8	1-5/8	1-5/8
Charge (lbs)						
RTPF	37.8	40.8	44.6	47.8	51.1	
Legend:						
Equivalent Length	Equivalent tubing length, including effects of refrigeration specialties devices					
Linear Length	Linear tubing length, feet					
Liquid Line	Tubing size, inches OD.					
Max Lift	Maximum liquid lift (indoor unit ABOVE outdoor unit only), at maximum permitted liquid line pressure drop <ul style="list-style-type: none"> Linear Length Less than 75 ft (23 m): Minimum 2.0°F subcooling entering TXV Linear Length Greater than 75 ft (23m): Minimum 0.5°F subcooling entering TXV 					
Suction Line	Tube size, inches OD					
Charge	Charge Quantity, lbs. Calculated for both liquid line sizes (where applicable), but only with larger suction line size (where applicable)					
DNU	Do Not Use (pressure drop exceeds available subcooling in this model)					
NOTE:	For applications with equivalent length greater than 188 ft (57 m) and/or linear length greater than 125 ft (38 m), contact your local representative.					

CAS120–240 PIPING RECOMMENDATIONS (TWO-CIRCUIT UNIT)
 CAS120, CAS150, CAS180, CAS240 require TWO sets of refrigeration piping

R-410A	Equivalent Length					
	Ft	0–38	38–75	75–113	113–150	150–188
	m	0–12	12–23	23–34	34–46	46–57
Model CAS	Linear Length					
	Ft	0–25	25–50	50–75	75–100	100–125
	m	0–8	8–15	15–23	23–30	30–38
120	Liquid Line	3/8	3/8	3/8 1/2	3/8 1/2	3/8 1/2
	Max Lift (ft) RTPF	25	50	75 NR	83 100	62 125
	Suction Line	7/8	7/8	1 1/8	1 1/8	1 1/8
	Charge (lbs) (ea circuit) RTPF	13.3	14.3	15.8 NR	16.9 20.0	18.1 22.0
150	Liquid Line	3/8	3/8	3/8 1/2	3/8 1/2	3/8 1/2
	Max Lift (ft) RTPF	25	50	75 NR	54 100	45 125
	Suction Line	7/8	7/8	1 1/8	1 1/8	1 1/8
	Charge (lbs) (ea circuit) RTPF	23.0	24.0	27.8 NR	26.6 29.7	27.8 31.7
180	Liquid Line	1/2	1/2	1/2	1/2	1/2
	Max Lift	25	50	75	100	125
	Suction Line	7/8	1 1/8	1 1/8	1 1/8	1 1/8
	Charge ea. (lbs) RTPF	21.7	23.8	25.7	27.6	29.6
240	Liquid Line	1/2	1/2	1/2 5/8	1/2 5/8	1/2 5/8
	Max Lift	25	50	54 75	60 99	46 95
	Suction Line	1 1/8	1 1/8	1 1/8	1 1/8 1 3/8	1 3/8
	Charge (lbs) 1 2	19.3 18.3	21.0 20.3	23.0 26.0 22.0 25.0	25.9 29.7 24.9 28.7	28.0 32.7 27.0 31.7
Legend:						
Equivalent Length	Equivalent tubing length, including effects of refrigeration specialties devices					
Linear Length	Linear tubing length, feet					
Liquid Line	Tubing size, inches OD.					
Max Lift	Maximum liquid lift (indoor unit ABOVE outdoor unit only), at maximum permitted liquid line pressure drop • Linear Length Less than 75 ft (23 m): Minimum 2.0°F subcooling entering TXV • Linear Length Greater than 75 ft (23m): Minimum 0.5°F subcooling entering TXV					
Suction Line	Tube size, inches OD See highlighted: Do not use with RTPF coil model					
Charge	Charge Quantity, lbs. Calculated for both liquid line sizes (where applicable), but only with larger suction line size (where applicable)					
DNU	Do Not Use (pressure drop exceeds available subcooling in this model)					
NR	Not Recommended (use smaller liquid tube size)					
NOTE:	For applications with equivalent length greater than 188 ft (57 m) and/or linear length greater than 125 ft (38 m), contact your local representative.					

TYPICAL PIPING AND WIRING – Roof Installation and a Ceiling-Mounted Fan Coil



C09054

LEGEND:

NEC – National Electrical Code

TXV – Thermostatic Expansion Valve

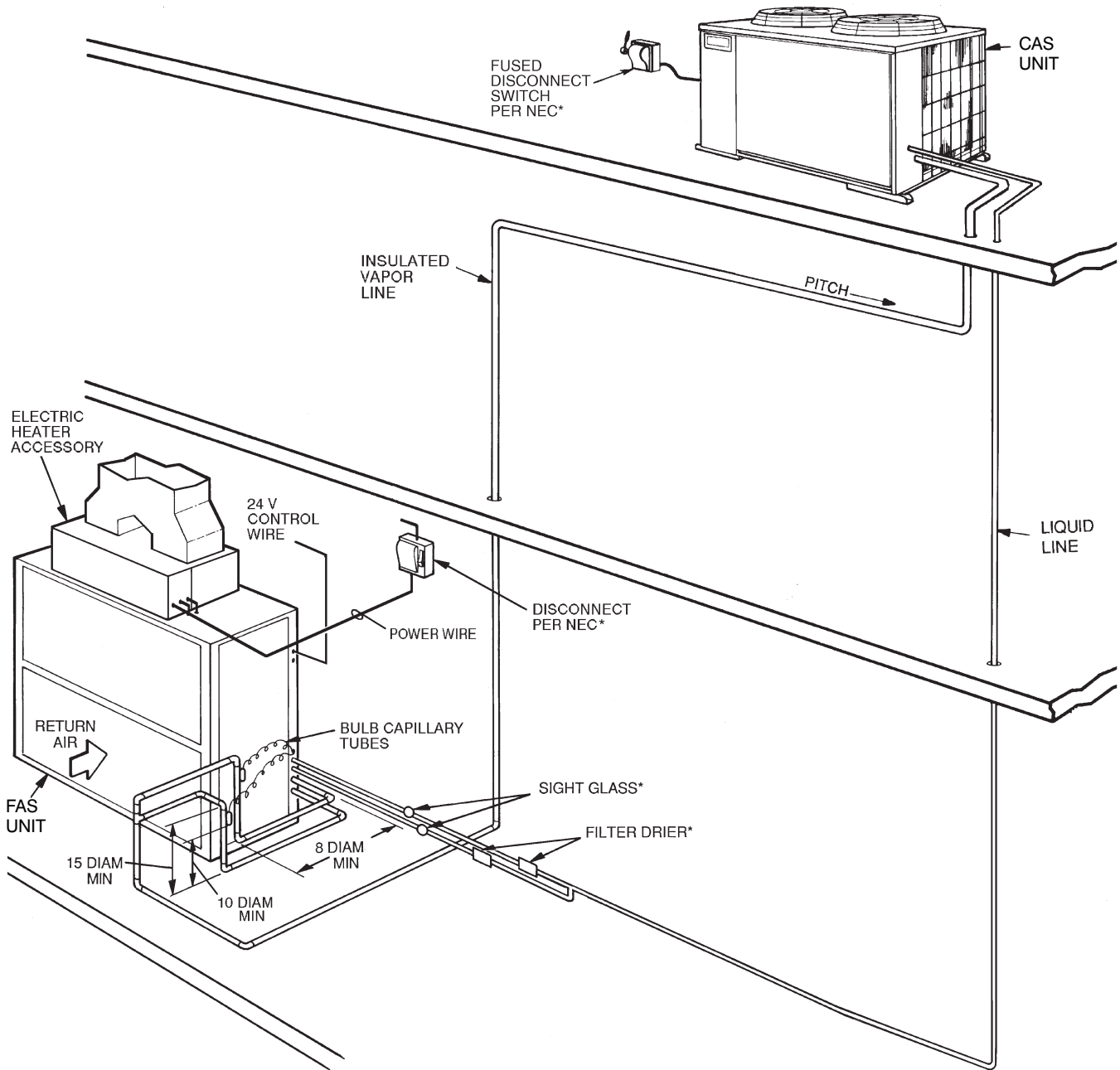
* Field-supplied

† Double riser may be required.

NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

TYPICAL PIPING AND WIRING – Roof Installation and a Vertical Discharge Fan Coil



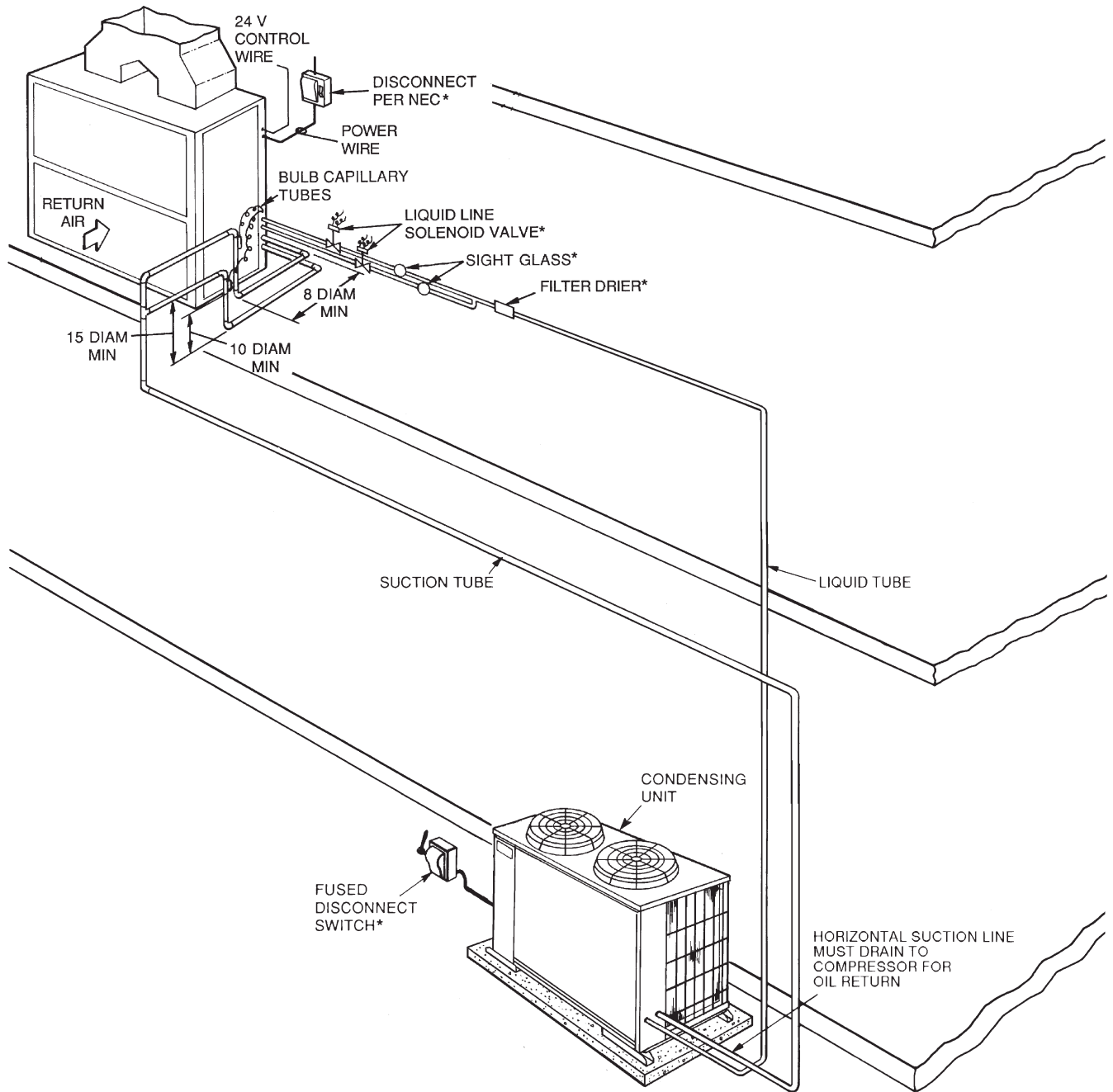
LEGEND:

- DIAM – Diameter
- NEC – National Electrical Code
- TXV – Thermostatic Expansion Valve
- * Field-supplied

NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

TYPICAL PIPING AND WIRING – Ground Level Installation and Vertical Discharge Fan Coil



LEGEND:

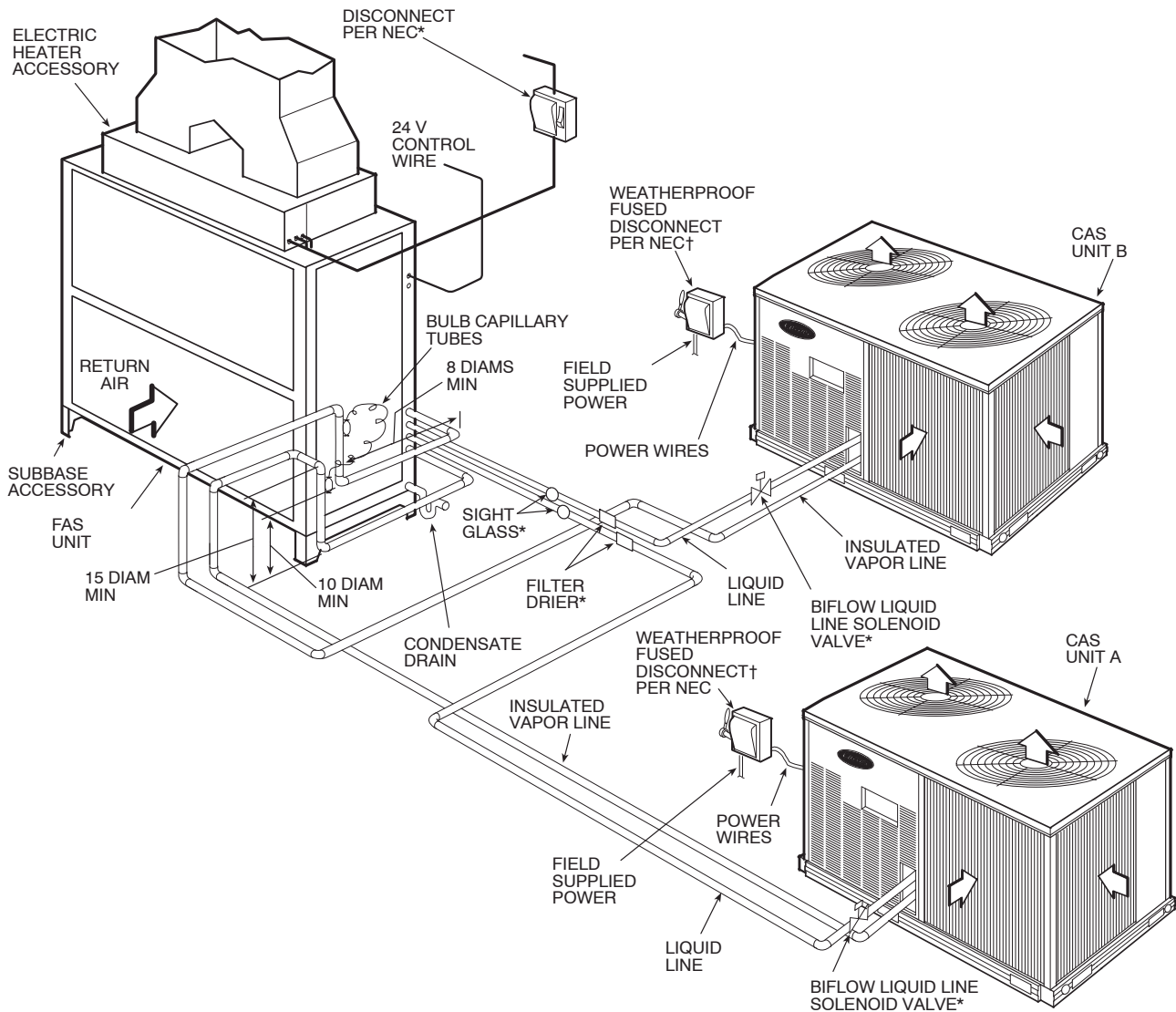
- DIAM- Diameter
- NEC - National Electrical Code
- TXV - Thermostatic Expansion Valve
- * Field-supplied

NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

TYPICAL PIPING AND WIRING – Dual Condensing Units and a Dual Circuit Fan



LEGEND:

- DIAM – Diameter
- NEC – National Electrical Code
- TXV – Thermostatic Expansion Valve

* Field-supplied

+ Field-supplied; not required if FIOP disconnect is supplied.

NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Unit A should be the first on, last off and be connected to the lower half of the coil.
6. Internal factory-supplied TXVs not shown.

GUIDE SPECIFICATIONS

Commercial Air-Cooled Condensing Units

HVAC Guide Specifications

Size Range: **CAS 6 to 20 Tons, Nominal**

Part 1 — General

1.01 SYSTEM DESCRIPTION

Outdoor-mounted, air-cooled condensing unit suitable for on-the-ground or rooftop installation. Unit shall consist of a hermetic scroll air-conditioning compressor assembly, an air-cooled coil, propeller-type condenser fans, and a control box. Unit shall discharge supply air upward as shown on contract drawings. Unit shall be used in a refrigeration circuit matched with a packaged air-handling unit.

1.02 QUALITY ASSURANCE

- A. Unit shall be rated in accordance with AHRI Standard 360.
- B. Unit construction shall comply with ANSI/ASHRAE 15 safety code latest revision and comply with NEC.
- C. Unit shall be constructed in accordance with UL 1995 standard and shall carry the UL and UL, Canada label.
- D. Unit cabinet shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
- E. Air-cooled condenser coils for hermetic compressor units (CAS) shall be leak tested at 150 psig, and pressure tested at 650 psig.
- F. Unit shall be manufactured in a facility registered to ISO 9001:2000 manufacturing quality standard.

1.03 DELIVERY, STORAGE, AND HANDLING

Unit shall be shipped as single package only, and shall be stored and handled according to unit manufacturer's recommendations.

1.04 WARRANTY (FOR INCLUSION BY SPECIFYING ENGINEER.)

Part 2 — Products

2.01 EQUIPMENT

A. General:

Factory-assembled, single piece, air-cooled condensing unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, compressor, holding charge, and special features required prior to field start-up.

B. Unit Cabinet:

- 1. Unit cabinet shall be constructed of G90 galvanized steel for CAS180/181 & 240/241, G60 galvanized steel for CAS072-151, bonderized and coated with a prepainted baked enamel finish.
- 2. A heavy-gauge roll-formed perimeter base rail with forklift slots and lifting holes shall be provided to facilitate rigging.

C. Condenser Fans:

- 1. Condenser fans shall be direct driven, propeller type, discharging air vertically upward.
- 2. Fan blades shall be balanced.
- 3. Condenser fan discharge openings shall be equipped with PVC-coated steel wire safety guards.
- 4. Condenser fan and motor shaft shall be corrosion resistant.

D. Compressor:

- 1. Compressor shall be of the hermetic scroll type .
- 2. Compressor shall be mounted on rubber grommets.
- 3. Compressors shall include overload protection.
- 4. Compressors shall be equipped with a crankcase heater.
- 5. Compressor shall be equipped with internal high pressure and high temperature protection.
- 6. CAS181 and CAS241 shall use two scroll compressors manifold together.

E. Condenser Coil:

- 1. Standard Aluminum fin * Copper Tube Coils:
 - a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
 - b. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.

- c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.
- 2. Optional Pre-coated aluminum-fin condenser coils:
 - a. Shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments.
 - b. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.
 - c. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.
- 3. Optional Copper-fin evaporator and condenser coils:
 - a. Shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets.
 - b. Galvanized steel tube sheets shall not be acceptable.
 - c. A polymer strip shall prevent coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan.
- 4. Optional E-coated aluminum-fin evaporator and condenser coils:
 - a. Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins.
 - b. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.
 - c. Color shall be high gloss black with gloss per ASTM D523-89.
 - d. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges.
 - e. Superior hardness characteristics of 2H per ASTM D3363-92A and cross-hatch adhesion of 4B-5B per ASTM D3359-93.
 - f. Impact resistance shall be up to 160 in.-lb (ASTM D2794-93).
 - g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92).
 - h. Corrosion durability shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117-90.
- F. Refrigeration Components:

Refrigeration circuit components shall include liquid line service valve, suction line service valve, a full charge of compressor oil, and a partial holding charge of refrigerant.
- G. Controls and Safeties:
 - 1. Minimum control functions shall include:
 - i. Control wire terminal blocks.
 - j. Compressor lockout on auto-reset safety until reset from thermostat.
 - k. Each unit shall utilize the Comfort Alert™ Diagnostic Board that provides:
 - 1.) System Pressure Trip fault code indication
 - 2.) Short Cycling fault code indication
 - 3.) Locked Rotor fault code indication
 - 4.) Open Circuit fault code indication
 - 5.) Reverse Phase 3 fault code indication
 - 6.) Welded Contactor fault code indication
 - 7.) Low Voltage fault code indication
 - 8.) Anti-short cycle protection
 - 9.) Phase reversal protection
 - 2. Minimum safety devices which are equipped with automatic reset (after resetting first at thermostat), shall include:
 - a. High discharge pressure cutout.
 - b. Low pressure cutout.
- H. Operating Characteristics:
 - 1. The capacity of the condensing unit shall meet or exceed _____ Btuh at a suction temperature of _____ °F. The power consumption at full load shall not exceed _____ kW.
 - 2. The combination of the condensing unit and the evaporator or fan coil unit shall have a total net cooling capacity of _____ Btuh or greater at conditions of _____ cfm entering-air temperature at the evaporator at _____ °F wet bulb and _____ °F dry bulb, and air entering the condensing unit at _____ °F.
 - 3. The system shall have an EER of _____ Btuh/Watt I. Electrical Requirements:
 - 1. Nominal unit electrical characteristics shall be _____ v, 3-ph, 60 Hz. The unit shall be capable of satisfactory operation within voltage limits of _____ v to _____ v.
 - 2. Unit electrical power shall be single-point connection.

3. Unit control circuit shall contain a 24-v transformer for unit control.

J. Special Features:

1. Low-Ambient Temperature Control:

A low-ambient temperature control shall be available as a factory-installed option or as a field-installed accessory. This low-ambient control shall regulate speed of the condenser-fan motors in response to the saturated condensing temperature of the unit. The control shall maintain correct condensing pressure at outdoor temperatures down to -20°F (-29°C).

2. Unit-Mounted, Non-Fused Disconnect Switch:

Switch shall be factory-installed and internally mounted. NEC and UL-approved non-fused switch shall provide unit power shutoff. Switch shall be accessible from outside the unit and shall provide power off lockout capability.

3. Non-Powered Convenience Outlet:

Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle. Outlet shall include 15 amp GFI (ground fault interrupter) receptacle with independent fuse protection. Voltage required to operate convenience outlet shall be field supplied and separate from the unit power supply. Outlet shall be accessible from outside the unit.

4. Thermostat Controls (field supplied):

- a. Programmable multi-stage thermostat shall have 7-day clock, holiday scheduling, large backlit display, remote sensor capability, and Title 24 compliance.

- b. Commercial Electronic Thermostat shall have 7-day timeclock, auto-changeover, multi-stage capability, and large LCD (liquid crystal display) temperature display.

5. Louvered hail Guard Package:

Louvered hail guard package shall protect coils against damage from hail and other flying debris.