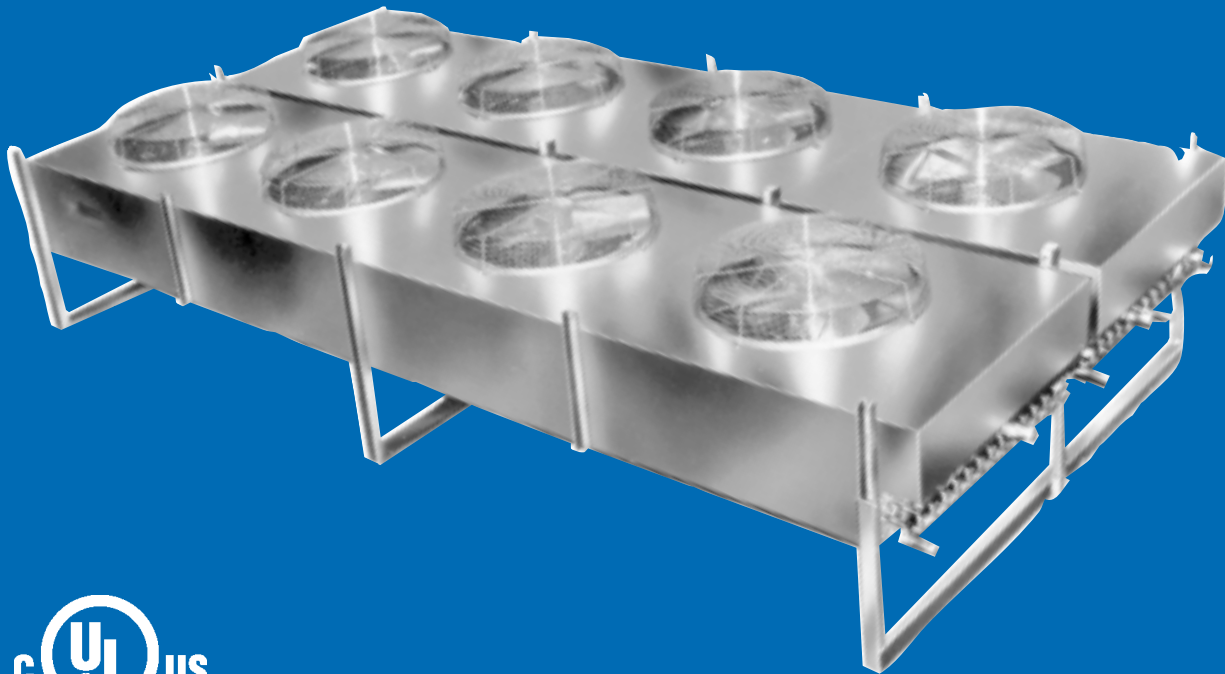


# Computer Room Air Cooled Condenser

Publication No. 401.4  
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5 Thru 164 Nominal tons

Variable Speed  
Head Pressure  
Control

# General

Russell's new CAC/CBC air cooled condenser design allows less fluctuation in discharge head pressures when ambient temperatures vary. Combining a variable speed, header end fan(s), with fans controlled by standard cycling techniques provides a stable, energy efficient refrigeration system.

## Features

### MOTORS / CONTROLS

Header end Vari - speed motors are specifically designed for P66 application.

Johnson P66 fan motor speed control:

- Pressure sensing

- 230/1/60 or 460/1/60 power

- Single or Dual system input

- 24V control voltage

- Double wide condensers have 2 independent P66 controllers.

Fan cycle control, temperature or pressure sensing, on remaining fans (if applicable).

Units can be wired for an external control power source

(24,115 or 208/230V) or control voltage can be provided by an 0.15 KVA internal control voltage transformer (24V only) unless otherwise specified.

Fan guards are epoxy coated and fabricated from heavy gauge steel rod.

**CAC** models use only 3/4 HP single phase fan motors with 24" fan blades, and be wired for single or three phase input power.

**CBC** models use 3/4 HP single phase Vari - Speed fan motor(s) and 24" fan blades on the header end fan sections, and 1-1/2 HP three phase constant speed motors with 30" fan blades on all other fan sections. These models are only available for three phase input power applications.

Units are available for 230/1/60, 230/3/60, 460/1/60, or 460/3/60 applications (see page 6 for definition)

[Consult Factory for 50 Hertz operation].

Motor assemblies are supported in all-welded, heavy gauge wire support structures. The wire structures are zinc - chromate coated for corrosion protection.

### COILS

Coil fins are manufactured from die formed corrugated Aluminum. The tubes are seamless 1/2" OD Copper, arranged in a staggered pattern and mechanically expanded into the fins and tube sheets for optimum heat transfer efficiency.

Tube sheets are clean punched from 0.080" Aluminum to resist wear at the tube.

Headers are produced from heavy wall Copper tubing, and are brazed to the coil using a high temperature brazing process.

All coils are leak tested in a illuminated test tank at a pressure of 400 psig.

Heavy gauge galvanized steel casing and support members.

### OPTIONS

**Flooded condenser control** - available using three-way modulating valves controlled by discharge pressure. Valves are shipped mounted.

**Motor fusing** - available on all models. Motors can be fused individually or in pairs on double width units.

**Sub-cooling** - available as an integral part of the condenser.

**Disconnect switch** - thru the door disconnect ( non - fused ).

**Fins** - available in four options; Aluminum, Copper, polyester coated Aluminum, and baked phenolic coated Aluminum.

**Multiple system circuiting** - up to 4 separate systems are available per unit.

**Horizontal air discharge** - available upon request for all models. Contact Russell for details.

## Selections

For the proper selection of an air cooled condenser it is necessary to know the total heat rejection of the condenser. The Total Heat of Rejection (THR) is equivalent to the sum of the Net Refrigerating Effect (NRE) plus the heat of compression added by the compressor. The amount of heat added to the refrigerant will depend on the style of compressor, open or suction cooled, and the operating conditions of the system.

Whenever the THR values are available from the compressor manufacturer they should be used in selecting a condenser.

For those cases in which the THR data is unavailable it can be quickly estimated using the following equation and the appropriate factor from Tables 1 or 2.

**Eq. (1) THR = Compressor Capacity x Heat Rejection Factor**

In those cases where the refrigeration system is of a multiple or cascade style, the following equations should be used to estimate the total heat of rejection.

**Open Compressor**

**Eq. (2) THR = Compressor Capacity + (2545 x BHP)**

**Suction Cooled Compressor**

**Eq. (3) THR = Compressor Capacity + (3413 x KW)**

Altitude at which a condenser is to operate will also affect its capacity. In order to correctly select a condenser at a specific altitude, use the following equation and the appropriate correction factor from Table 3.

**Eq. (4) THR Corrected = THR Design x Altitude Correction Factor**

**Selection Example**

**Given:**

Altitude .....	5000 ft.
Ambient Temperature .....	90°F
Evaporator Temperature .....	20°F
Maximum Condensing Temperature .....	110°F
Refrigerant .....	R-22
Compressor Capacity (NRE) .....	225,000 BTUH
Compressor Type .....	Suction Cooled

Assume compressor THR is not available

**Calculate:**

1. Total Heat Rejection
2. Design temperature difference
3. Russell condenser size
4. Actual system TD
5. Actual condensing temperature

**Solution:**

1. Calculate the system THR from Table 2, a suction cooled compressor, at 110°F condensing temperature and 20°F evaporator temperature, will have a heat rejection factor of 1.33.

THR = Compressor Capacity x Heat Rejection Factor

THR = 299,250 BTUH

THR Corrected "Altitude" = THR x Altitude Corr. Factor

THR Corrected "Altitude" = 336,656 BTUH

2. Design TD = Condensing Temp. - Ambient Temp.

Design TD = 20°F

3. Select condenser size:

From page 4 locate single width CAC section of the page.

Then using the TD of 20°F calculated in Step 2, go to the appropriate column and select a condenser whose THR equals or exceeds that of which we calculated in Step 1; 336,656 BTUH.

A model CAC -37 with a THR of 366,000 BTUH will meet the required conditions.

4. Eq.(5) Actual TD =  $\frac{\text{Design TD} \times \text{Design THR}}{\text{Actual Condenser Capacity at Design TD}}$

Actual TD = 18.4°F

5. Eq.(6) Actual Condensing Temp. = Actual TD + Ambient Temp.

Actual Condensing Temp. = 108.4°F

**HEAT REJECTION FACTORS**

**TABLE 1 - OPEN COMPRESSOR**

EVAP-TEMP.	CONDENSING TEMPERATURE							
	90°	100°	105°	110°	115°	120°	125°	130°
-40°	1.45	1.48	1.52	1.56	1.58	1.61		
-35°	1.42	1.45	1.47	1.51	1.54	1.57		
-30°	1.39	1.41	1.44	1.47	1.50	1.53		
-25°	1.37	1.39	1.41	1.44	1.46	1.49	1.52	
-20°	1.34	1.37	1.39	1.41	1.43	1.45	1.48	1.51
-15°	1.31	1.34	1.37	1.38	1.40	1.42	1.45	1.47
-10°	1.28	1.31	1.33	1.37	1.38	1.40	1.42	1.45
0°	1.24	1.28	1.29	1.32	1.33	1.35	1.38	1.41
10°	1.21	1.24	1.26	1.28	1.30	1.31	1.34	1.36
20°	1.18	1.21	1.23	1.24	1.26	1.28	1.30	1.32
30°	1.15	1.18	1.20	1.21	1.23	1.24	1.26	1.28
40°	1.13	1.15	1.17	1.18	1.19	1.20	1.22	1.24
50°	1.11	1.13	1.14	1.15	1.16	1.17	1.18	1.20

**TABLE 2 - SUCTION COOLED COMPRESSOR**

EVAP. TEMP.	CONDENSING TEMPERATURE							
	90°	100°	105°	110°	115°	120°	125°	130°
-40°	1.67	1.71	1.75	1.79	1.84	1.90		
-35°	1.63	1.67	1.70	1.73	1.78	1.83		
-30°	1.58	1.62	1.65	1.68	1.72	1.77		
-25°	1.54	1.58	1.60	1.64	1.67	1.71	1.76	
-20°	1.49	1.53	1.56	1.58	1.63	1.66	1.70	1.75
-15°	1.46	1.50	1.52	1.54	1.58	1.62	1.65	1.69
-10°	1.42	1.46	1.48	1.50	1.53	1.57	1.62	1.64
0°	1.36	1.40	1.42	1.44	1.47	1.50	1.54	1.56
10°	1.31	1.34	1.36	1.38	1.40	1.43	1.47	1.49
20°	1.26	1.29	1.31	1.33	1.35	1.37	1.40	1.43
30°	1.22	1.25	1.26	1.28	1.30	1.32	1.35	1.37
40°	1.18	1.21	1.22	1.24	1.25	1.27	1.30	1.32
50°	1.14	1.17	1.18	1.20	1.21	1.23	1.25	1.27

**TABLE 3 - Altitude Correction Factor (ft.)**

Altitude	Sea Level	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
<b>Factor</b>	1.0	1.029	1.052	1.076	1.101	1.125	1.151	1.177	1.204	1.231	1.260

# Performance Data

## CAC - SINGLE WIDTH FAN SECTION

Model Number	Condenser Capacity					
	THR, MBH, R-22					
	1° TD	10° TD	15° TD	20° TD	25° TD	30° TD
CAC 5	2.7	27.1	40.7	54.2	67.8	81.3
CAC 6	2.9	29.7	44.6	59.4	74.3	89.1
CAC 7	3.7	37.1	55.7	74.2	92.8	111.3
CAC 8	4.4	44.2	66.3	88.4	110.5	132.6
CAC 9	4.7	47.6	71.4	95.2	119.0	142.8
CAC 11	5.7	57.0	85.5	114.0	142.5	171.0
CAC 13	7.5	75.0	112.5	150.0	187.5	225.0
CAC 15	7.9	79.0	118.5	158.0	197.5	237.0
CAC 17	9.3	93.0	139.5	186.0	232.5	279.0
CAC 19	9.8	98.0	147.0	196.0	245.0	294.0
CAC 21	11.2	112.0	168.0	224.0	280.0	336.0
CAC 24	12.8	128.0	192.0	256.0	320.0	384.0
CAC 28	14.3	143.0	214.5	286.0	357.5	429.0
CAC 30	15.5	155.0	232.5	310.0	387.5	465.0
CAC 37	18.3	183.0	274.5	366.0	457.5	549.0
CAC 40	20.0	200.0	300.0	400.0	500.0	600.0

## CAC - DOUBLE WIDTH FAN SECTION

Model Number	Condenser Capacity					
	THR, MBH, R-22					
	1° TD	10° TD	15° TD	20° TD	25° TD	30° TD
CAC 23	11.4	114.0	171.0	228.0	285.0	342.0
CAC 31	15.8	158.0	237.0	316.0	395.0	474.0
CAC 35	19.6	196.0	294.0	392.0	490.0	588.0
CAC 44	21.4	214.3	321.5	428.7	535.8	643.0
CAC 51	23.7	237.0	355.5	474.0	592.5	711.0
CAC 57	28.6	286.0	429.0	572.0	715.0	858.0
CAC 61	31.0	310.0	465.0	620.0	775.0	930.0
CAC 75	36.6	366.0	549.0	732.0	915.0	1098.0
CAC 80	40.0	400.0	600.0	800.0	1000.0	1200.0

## CBC - SINGLE WIDTH FAN SECTION

Model Number	Condenser Capacity					
	THR, MBH, R-22					
	1° TD	10° TD	15° TD	20° TD	25° TD	30° TD
CBC 27	13.5	135.0	202.5	270.0	337.5	405.0
CBC 33	16.2	161.7	242.5	323.3	404.2	485.0
CBC 41	20.3	203.0	304.5	406.0	507.5	609.0
CBC 45	22.0	220.0	330.0	440.0	550.0	660.0
CBC 50	23.7	237.0	355.5	474.0	592.5	711.0
CBC 56	26.5	265.0	397.5	530.0	662.5	795.0
CBC 60	28.9	289.0	433.5	578.0	722.5	867.0
CBC 64	31.3	313.3	470.0	626.7	783.3	940.0
CBC 70	34.0	340.0	510.0	680.0	850.0	1020.0
CBC 81	40.5	405.0	607.5	810.0	1012.5	1215.0

## CBC - DOUBLE WIDTH FAN SECTION

Model Number	Condenser Capacity					
	THR, MBH, R-22					
	1° TD	10° TD	15° TD	20° TD	25° TD	30° TD
CBC 54	27.0	270.0	405.0	540.0	675.0	810.0
CBC 66	32.3	323.3	485.0	646.7	808.3	970.0
CBC 82	41.0	410.0	615.0	820.0	1025.0	1230.0
CBC 92	44.8	448.3	672.5	896.7	1120.8	1345.0
CBC 100	48.8	488.3	732.5	976.7	1220.8	1465.0
CBC 112	54.2	541.7	812.5	1083.3	1354.2	1625.0
CBC 128	62.3	623.3	935.0	1246.7	1558.3	1870.0
CBC 140	68.0	680.0	1020.0	1360.0	1700.0	2040.0
CBC 164	80.0	800.0	1200.0	1600.0	2000.0	2400.0

## Electrical Data

### CAC - SINGLE WIDTH FAN SECTION

Model Number	208/230/1			460/1		
	FLA	MCA	MOPD	FLA	MCA	MOPD
CAC 5	4.5	5.6	15.0	2.3	2.9	15.0
CAC 6	4.5	5.6	15.0	2.3	2.9	15.0
CAC 7	4.5	5.6	15.0	2.3	2.9	15.0
CAC 8	4.5	5.6	15.0	2.3	2.9	15.0
CAC 9	4.5	5.6	15.0	2.3	2.9	15.0
CAC 11	8.7	9.8	17.5	4.4	5.0	15.0
CAC 13	8.7	9.8	17.5	4.4	5.0	15.0
CAC 15	8.7	9.8	17.5	4.4	5.0	15.0
CAC 17	8.7	9.8	17.5	4.4	5.0	15.0
CAC 19	8.7	9.8	17.5	4.4	5.0	15.0
CAC 21	12.9	14.0	25.0	6.5	7.1	15.0
CAC 24	12.9	14.0	25.0	6.5	7.1	15.0
CAC 28	12.9	14.0	25.0	6.5	7.1	15.0
CAC 30	17.1	18.2	35.0	8.6	9.2	17.5
CAC 37	17.1	18.2	35.0	8.6	9.2	17.5
CAC 40	17.1	18.2	35.0	8.6	9.2	17.5

### CAC - DOUBLE WIDTH FAN SECTION

Model Number	208/230/1			460/1		
	FLA	MCA	MOPD	FLA	MCA	MOPD
CAC 23	17.4	18.5	35.0	8.8	9.4	17.5
CAC 31	17.4	18.5	35.0	8.8	9.4	17.5
CAC 35	17.4	18.5	35.0	8.8	9.4	17.5
CAC 44	25.8	26.9	50.0	13.0	13.6	25.0
CAC 51	25.8	26.9	50.0	13.0	13.6	25.0
CAC 57	25.8	26.9	50.0	13.0	13.6	25.0
CAC 61	34.2	35.3	70.0	17.2	17.8	35.0
CAC 75	34.2	35.3	70.0	17.2	17.8	35.0
CAC 80	34.2	35.3	70.0	17.2	17.8	35.0

### CBC - SINGLE WIDTH FAN SECTION

Model Number	208/230/3			460/3		
	FLA	MCA	MOPD	FLA	MCA	MOPD
CBC 27	17.3	19.0	25.0	8.7	10.0	15.0
CBC 33	17.3	19.0	25.0	8.7	10.0	15.0
CBC 41	17.3	19.0	25.0	8.7	10.0	15.0
CBC 45	17.3	19.0	25.0	8.7	10.0	15.0
CBC 50	23.7	25.0	30.0	11.9	13.0	15.0
CBC 56	23.7	25.0	30.0	11.9	13.0	15.0
CBC 60	23.7	25.0	30.0	11.9	13.0	15.0
CBC 64	30.1	31.0	40.0	15.1	16.0	20.0
CBC 70	30.1	31.0	40.0	15.1	16.0	20.0
CBC 81	30.1	31.0	40.0	15.1	16.0	20.0

### CBC - DOUBLE WIDTH FAN SECTION

Model Number	208/230/3			460/3		
	FLA	MCA	MOPD	FLA	MCA	MOPD
CBC 54	34.6	36.0	40.0	17.4	18.0	25.0
CBC 66	34.6	36.0	40.0	17.4	18.0	25.0
CBC 82	34.6	36.0	40.0	17.4	18.0	25.0
CBC 92	34.6	36.0	40.0	17.4	18.0	25.0
CBC 100	47.4	49.0	60.0	23.8	25.0	30.0
CBC 112	47.4	49.0	60.0	23.8	25.0	30.0
CBC 128	60.2	62.0	75.0	30.2	31.0	40.0
CBC 140	60.2	62.0	75.0	30.2	31.0	40.0
CBC 164	60.2	62.0	75.0	30.2	31.0	40.0

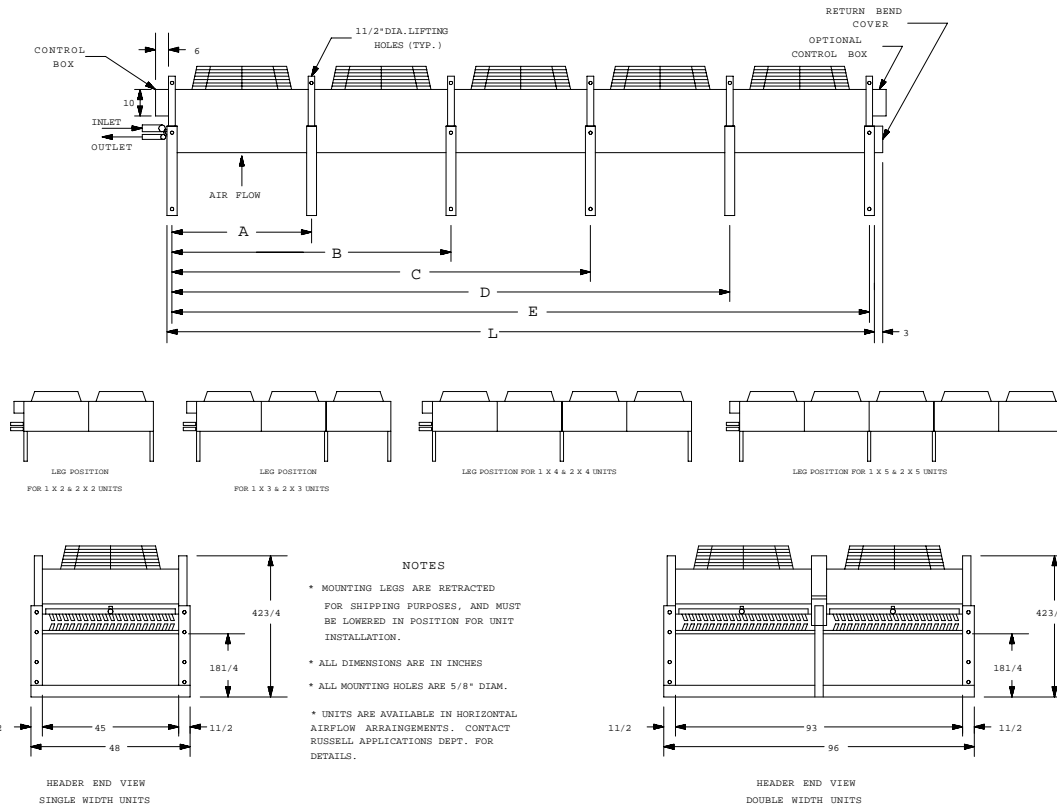
#### NOTES:

- FLA = Full Load Amps.
- MCA = Minimum Circuit Ampacity.
- MOPD = Maximum Over - Current Protection Device.

# Physical Data

Model Number	Fan Data			Motor Data				Ref.Chg. R-22 (lbs)	Dimensions						Ship Wt. (lbs)
	Qty	CFM	Qty & Dia. (In.)	1 Phase		3 Phase			A	B	C	D	E	L	
				HP	Qty	HP	Qty								
<b>CAC - SINGLE WIDTH FAN SECTION</b>															
CAC 5	1	5200	(1) 24	3/4	1	-	-	2.9	30	-	-	-	-	32-1/4	220
CAC 6	1	5100	(1) 24	3/4	1	-	-	2.9	30	-	-	-	-	32-1/4	235
CAC 7	1	5000	(1) 24	3/4	1	-	-	4.4	30	-	-	-	-	32-1/4	270
CAC 8	1	4900	(1) 24	3/4	1	-	-	5.9	30	-	-	-	-	32-1/4	295
CAC 9	1	4800	(1) 24	3/4	1	-	-	5.9	30	-	-	-	-	32-1/4	302
CAC 11	2	10400	(2) 24	3/4	2	-	-	5.5	-	60	-	-	-	62-1/4	340
CAC 13	2	10200	(2) 24	3/4	2	-	-	8.2	-	60	-	-	-	62-1/4	355
CAC 15	2	10000	(2) 24	3/4	2	-	-	8.2	-	60	-	-	-	62-1/4	370
CAC 17	2	9800	(2) 24	3/4	2	-	-	10.9	-	60	-	-	-	62-1/4	400
CAC 19	2	9600	(2) 24	3/4	2	-	-	13.7	-	60	-	-	-	62-1/4	420
CAC 21	3	15000	(3) 24	3/4	3	-	-	12.0	-	60	90	-	-	92-1/4	510
CAC 24	3	14750	(3) 24	3/4	3	-	-	16.0	-	60	90	-	-	92-1/4	560
CAC 28	3	14550	(3) 24	3/4	3	-	-	20.0	-	60	90	-	-	92-1/4	630
CAC 30	4	20000	(4) 24	3/4	4	-	-	15.8	-	60	-	120	-	122-1/4	680
CAC 37	4	19500	(4) 24	3/4	4	-	-	21.1	-	60	-	120	-	122-1/4	740
CAC 40	4	19000	(4) 24	3/4	4	-	-	26.4	-	60	-	120	-	122-1/4	800
<b>CAC - DOUBLE WIDTH FAN SECTION</b>															
CAC 23	4	20800	(4) 24	3/4	4	-	-	10.9	-	60	-	-	-	62-1/4	760
CAC 31	4	20000	(4) 24	3/4	4	-	-	16.4	-	60	-	-	-	62-1/4	790
CAC 35	4	19200	(4) 24	3/4	4	-	-	27.4	-	60	-	-	-	62-1/4	890
CAC 44	6	30000	(6) 24	3/4	6	-	-	24.1	-	60	90	-	-	92-1/4	1,080
CAC 51	6	29200	(6) 24	3/4	6	-	-	32.1	-	60	90	-	-	92-1/4	1,190
CAC 57	6	29000	(6) 24	3/4	6	-	-	40.1	-	60	90	-	-	92-1/4	1,330
CAC 61	8	40000	(8) 24	3/4	8	-	-	31.7	-	60	-	120	-	122-1/4	1,440
CAC 75	8	39000	(8) 24	3/4	8	-	-	42.3	-	60	-	120	-	122-1/4	1,580
CAC 80	8	38000	(8) 24	3/4	8	-	-	52.8	-	60	-	120	-	122-1/4	1,700
<b>CBC - SINGLE WIDTH FAN SECTION</b>															
CBC 27	3	26600	(1) 24, (2) 30	3/4	1	1-1/2	2	16.6	-	78	126	-	-	128-1/4	690
CBC 33	3	26000	(1) 24, (2) 30	3/4	1	1-1/2	2	16.6	-	78	126	-	-	128-1/4	700
CBC 41	3	25400	(1) 24, (2) 30	3/4	1	1-1/2	2	22.1	-	78	126	-	-	128-1/4	760
CBC 45	3	24800	(1) 24, (2) 30	3/4	1	1-1/2	2	27.7	-	78	126	-	-	128-1/4	820
CBC 50	4	37000	(1) 24, (3) 30	3/4	1	1-1/2	3	22.7	-	78	-	174	-	176-1/4	985
CBC 56	4	36400	(1) 24, (3) 30	3/4	1	1-1/2	3	30.3	-	78	-	174	-	176-1/4	1,020
CBC 60	4	35850	(1) 24, (3) 30	3/4	1	1-1/2	3	37.9	-	78	-	174	-	176-1/4	1,060
CBC 64	5	47000	(1) 24, (4) 30	3/4	1	1-1/2	4	28.8	-	78	126	-	222	224-1/4	1,350
CBC 70	5	45900	(1) 24, (4) 30	3/4	1	1-1/2	4	38.4	-	78	126	-	222	224-1/4	1,420
CBC 81	5	44800	(1) 24, (4) 30	3/4	1	1-1/2	4	48.1	-	78	126	-	222	224-1/4	1,560
<b>CBC - DOUBLE WIDTH FAN SECTION</b>															
CBC 54	6	49600	(2) 24, (4) 30	3/4	2	1-1/2	4	33.2	-	78	126	-	-	128-1/4	1,430
CBC 66	6	52000	(2) 24, (4) 30	3/4	2	1-1/2	4	33.2	-	78	126	-	-	128-1/4	1,480
CBC 82	6	50800	(2) 24, (4) 30	3/4	2	1-1/2	4	44.3	-	78	126	-	-	128-1/4	1,560
CBC 92	6	49600	(2) 24, (4) 30	3/4	2	1-1/2	4	55.4	-	78	126	-	-	128-1/4	1,690
CBC 100	8	74000	(2) 24, (6) 30	3/4	2	1-1/2	6	45.4	-	78	-	174	-	176-1/4	2,040
CBC 112	8	71700	(2) 24, (6) 30	3/4	2	1-1/2	6	60.6	-	78	-	174	-	176-1/4	2,110
CBC 128	10	94000	(2) 24, (8) 30	3/4	2	1-1/2	8	57.7	-	78	126	-	222	224-1/4	2,800
CBC 140	10	91800	(2) 24, (8) 30	3/4	2	1-1/2	8	76.9	-	78	126	-	222	224-1/4	2,940
CBC 164	10	89600	(2) 24, (8) 30	3/4	2	1-1/2	8	96.1	-	78	126	-	222	224-1/4	3,220

## Dimensional Data



## Connection Sizes\*

### CAC - SINGLE WIDTH FAN SECTION

MODEL NUMBER	INLET	OUTLET
CAC 5	1-1/8	7/8
CAC 6	1-1/8	7/8
CAC 7	1-1/8	7/8
CAC 8	1-1/8	7/8
CAC 9	1-3/8	7/8
CAC 11	1-1/8	7/8
CAC 13	1-3/8	7/8
CAC 15	1-3/8	7/8
CAC 17	1-3/8	7/8
CAC 19	1-3/8	7/8
CAC 21	1-5/8	1-1/8
CAC 24	1-5/8	1-1/8
CAC 28	1-5/8	1-1/8
CAC 30	2-1/8	1-1/8
CAC 37	2-1/8	1-1/8
CAC 40	2-1/8	1-1/8

### CAC - DOUBLE WIDTH FAN SECTION

CAC 23	1-1/8	7/8
CAC 31	1-3/8	7/8
CAC 35	1-3/8	7/8
CAC 44	1-5/8	1-1/8
CAC 51	1-5/8	1-1/8
CAC 57	1-5/8	1-1/8
CAC 61	2-1/8	1-1/8
CAC 75	2-1/8	1-1/8
CAC 80	2-1/8	1-1/8

### CBC - SINGLE WIDTH FAN SECTION

MODEL NUMBER	INLET	OUTLET
CBC 27	1-5/8	1-1/8
CBC 33	2-1/8	1-1/8
CBC 41	2-1/8	1-1/8
CBC 45	2-1/8	1-1/8
CBC 50	2-1/8	1-3/8
CBC 56	2-5/8	1-3/8
CBC 60	2-5/8	1-3/8
CBC 64	2-5/8	1-3/8
CBC 70	2-5/8	1-3/8
CBC 81	2-5/8	1-3/8

### CBC - DOUBLE WIDTH FAN SECTION

CBC 54	1-5/8	1-1/8
CBC 66	2-1/8	1-1/8
CBC 82	2-1/8	1-1/8
CBC 92	2-1/8	1-1/8
CBC 100	2-1/8	1-3/8
CBC 112	2-5/8	1-3/8
CBC 128	2-5/8	1-3/8
CBC 140	2-5/8	1-3/8
CBC 164	2-5/8	1-3/8

\* Connection sizes may vary do to conditions and application.

# Engineering Specifications

## GENERAL

Furnish and install as specified and as shown on plans, Russell type CAC/CBC air cooled condensers, arranged for (horizontal) (vertical) airflow. Condensers shall perform in accordance with (following schedule) (schedule on plan).

Each condenser shall consist of casing, condenser coil, direct driven propeller fan(s) driven by independent fan motor(s), fan guard and mounting legs. All fan motors shall be factory wired to a common electrical control box.

Condensers shall be UL/cUL listed & each unit shall bear the UL/cUL seal of approval.

## CONDENSER COIL

All condenser coils shall be fabricated of 1/2" O.D. seamless copper tubing. The tubes shall be mechanically expanded into full fin collars for permanent fin-tube contact. Fins shall be (Aluminum) (Copper) with die formed corrugations for optimum heat transfer capability. For additional corrosion protection the Aluminum fins shall have a (polyester) (baked phenolic) coating.

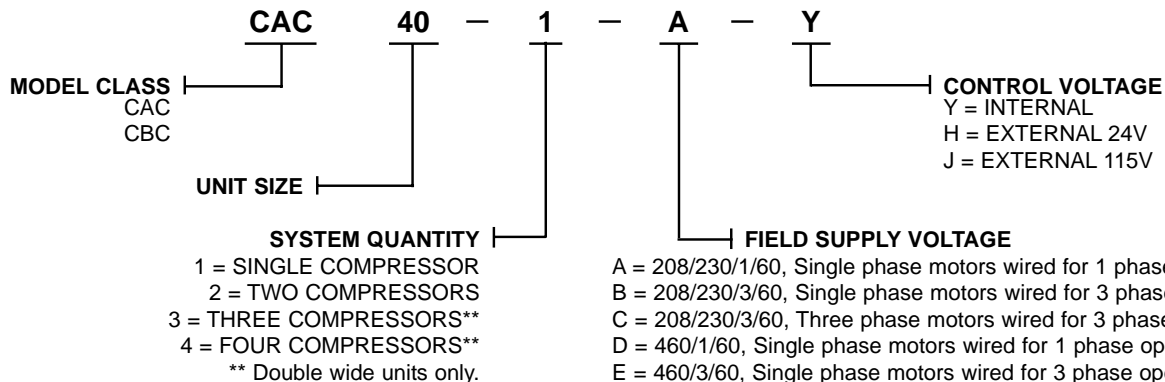
Headers shall be seamless heavy wall copper tubing.

Coils shall be leak tested at 400 psig in an illuminated water test tank.

## HOUSING

The casing of all CAC/CBC models shall be constructed from heavy gauge galvanized steel, designed to provide maximum casing rigidity as well as high corrosion protection.

## Nomenclature



## ORDERING INFORMATION

When ordering please specify, complete nomenclature description, refrigerant type, and THR capacity for each system.

## FANS

All fan blades shall be constructed of Aluminum, riveted onto a galvanized steel spider.

Fans shall be designed for low tip speed and minimal noise.

All fans shall be statically balanced and factory run prior to shipping to ensure quiet, trouble-free operation.

All multiple fan condensers shall be supplied with full width baffles to prevent air bypass.

## MOTORS

All motors shall be equipped with inherent overload protection rated for group installation.

All 3/4 HP single phase motors shall be open drip-proof, permanent split capacitor type with permanently lubricated ball bearings.

All 1 1/2 HP motors shall be open drip-proof 230/460/3/60 with permanently lubricated ball bearings. Motor shafts shall be keyed to the fan hub.

Motors shall be mounted in a zinc - chromate coated heavy steel rod support frame.

All units without control packages shall be factory wired into a weatherproof junction box with all motor leads tagged.