AIRQUEST® Heating And Cooling Products

CAC

Product Specifications

SPLIT SYSTEM AIR CONDITIONER – 115 MBtuh

Standard Efficiency

Representative photo only, some models may vary in appearance.

REFRIGERATION CIRCUIT

- R–22 Refrigerant
- High efficiency tandem scroll compressors on all models
- Two stage cooling with one independent circuit for efficient operation
- Copper tube / aluminum fin coil
- High and Low pressure switches
- 0° F Low ambient fan control device
- Anti–short cycle 24 volt Time Delay
- Crankcase heater for compressor protection in low ambient conditions.

BUILT TO LAST

- Triple–coated steel, consisting of a polyester top coat, a urethane primer coat preceded by an oxide pretreatment.
- Enhanced aluminum fins mechanically bonded to copper tubes for improved heat transfer
- Pre–painted fins provide additional corrosion resistance.
- Enhanced inlet grille with 3/8” spacing for extra coil protection.

EASY TO INSTALL AND SERVICE

- Easy access service valves on all models
- External high and low refrigerant service ports

WARRANTY

- 5 year compressor limited warranty
- 1 year parts limited warranty

ARI PERFORMANCE CERTIFIED ARI Standard 210/240 Unitary Air Conditioners

c UL us LISTED

Commercial Comfort™ 3 PHASE

UNIT PERFORMANCE DATA (3 Phase – 60 Hz)

Model Number *	COOLING				Voltage/ Phase/Hz	Unit Dimensions H x W x L	Ship Weight
	Nominal Capacity BTUH	E.E.R	S/T	I.P.L.V			
CAC120GHC	115,000	8.6	.78	11.5	208/230–3–60	42–1/2 x 27 x 28	471
CAC120GLC	115,000	8.6	.78	11.5	460–3–60	42–1/2 x 27 x 28	471
CAC120GSC	115,000	8.6	.78	11.5	575–3–60	42–1/2 x 27 x 28	471

* CAC120 matched with BAC120 Air Handler

International Comfort Products, LLC
650 Heil–Quaker Avenue, Lewisburg, TN 37091

501 51 1804 00

2/23/07

	UNIT SPECIFICATIONS		
Electrical	**CAC120HC**	**CAC120LC**	**CAC120SC**
Volts / Phase / Hertz	230/3/60	460/3/60	575/3/60
Voltage Min – Max	197–253	414–506	517–633
Total Unit Amps	40.1	20.9	16.4
Min. Circuit Amp.	44.4	23.2	18.2
Minimum Fuse Size	50	30	20
Max. Fuse	60	30	25
Compressor – PER COMPRESSOR			
FLA	17.3	8.97	7.05
LRA	137	62	50
Type	Tandem Scroll	Tandem Scroll	Tandem Scroll
Condenser Fan Data			
Quantity	1	1	1
Volts/Phase/Hertz	230/1/60	460/1/60	575/1/60
FLA	5.5	3.0	2.3
LRA	13.0	6.6	6.9
Blades/Diameter/Pitch	4/26/32	4/26/32	4/26/32
Hp – Rpm – Speeds	1–1100–1	1–1100–1	1–1100–1
Bearing Type	Sleeve	Sleeve	Sleeve
Rotation (Shaft End)	CW	CW	CW
Max. CFM	7500	7500	7500
Condenser Coil			
Rows / Fins per Inch	22 / 2	22 / 2	22 / 2
Total Face Area–Sq, ft.	26.62	26.62	26.62
Tube Diameter	3/8	3/8	3/8
Refrigerant			
Type	R–22	R–22	R–22
Ounces	Units Shipped with Holding Charge		
Approximate Operating Charge – Ounces, Based On BAC Series Air Handler	384		
Line Size Liquid I.D. (in.)	5/8	5/8	5/8
Line Size Suction I.D. (in.)	1–1/8	1–1/8	1–1/8
Controls			
Compressor IPR Valve (psi) Average	500	500	500
High Press. Switch Auto Reset – Open / Close psi	420–300	420–300	420–300
Low Press. Switch Auto Reset – Open– Close psi	5 – 20	5 – 20	5 – 20
Contactor Amps. (Qty. 2)	30 x 2	30 x 2	30 x 2
Low Ambient Control – Actuattion / Release	250 / 115	250 / 115	250 / 115
Crankcase Heater Type	Strap On	Strap On	Strap On
Misc.			
Shipping Weight	471	471	471

PERFORMANCE DATA COOLING

UNIT SIZE	Rated Capacity Btuh 1st /2nd Stage [1]	S/T	EER	I.P.L.V.	Capacity Stages % Cooling	Evaporator Rated Airflow
10 TON*	60,000 / 120,000	.78	9.1	11.0	50 / 100	4000 SCFM

[1] Net Capacity Ratings based on ARI Test Standards, 95° F Amb. 80° F DB / 67° F WB.

* CAC120 matched with BAC120 Air Handler

EXPANDED PERFORMANCE DATA (COOLING)- 10 Ton WITH BAC120 - (GROSS CAPACITY, See Notes on bottom page 4)

			Outdoor Ambient Temperature - Degrees F. Dry Bulb																							
			65				75				85				95				105				115			
			Entering Indoor Temperature - Degrees F. Wet Bulb																							
IDB*	Airflow		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
70	4480	MBh	118.5	122.8	134.5	-	115.7	119.9	131.4	-	113.0	117.1	128.3	-	110.2	114.2	125.1	-	104.7	108.5	118.9	-	97.0	100.5	110.1	-
		S/T	0.78	0.65	0.45	-	0.81	0.68	0.47	-	0.83	0.70	0.48	-	0.86	0.72	0.50	-	0.89	0.74	0.52	-	0.90	0.75	0.52	-
		KW	11.2	11.4	11.8	-	12.0	12.2	12.6	-	12.7	12.9	13.3	-	13.3	13.5	13.9	-	13.8	14.1	14.5	-	14.2	14.5	15.0	-
	4000	MBh	115.0	119.2	130.6	-	112.3	116.4	127.6	-	109.7	113.7	124.5	-	107.0	110.9	121.5	-	101.6	105.4	115.4	-	94.2	97.6	106.9	-
		S/T	0.75	0.62	0.43	-	0.77	0.65	0.45	-	0.79	0.66	0.46	-	0.82	0.68	0.47	-	0.85	0.71	0.49	-	0.86	0.72	0.50	-
		KW	11.1	11.4	11.7	-	11.9	12.1	12.5	-	12.6	12.8	13.2	-	13.2	13.4	13.8	-	13.7	14.0	14.4	-	14.1	14.4	14.8	-
	3520	MBh	109.3	113.3	124.1	-	106.7	110.6	121.2	-	104.2	108.0	118.3	-	101.6	105.4	115.4	-	96.6	100.1	109.7	-	89.4	92.7	101.6	-
		S/T	0.72	0.60	0.41	-	0.74	0.62	0.43	-	0.76	0.64	0.44	-	0.79	0.66	0.45	-	0.81	0.68	0.47	-	0.82	0.69	0.48	-
		KW	11.0	11.2	11.5	-	11.7	12.0	12.3	-	12.4	12.6	13.0	-	13.0	13.2	13.6	-	13.5	13.7	14.2	-	13.9	14.2	14.6	-
75	4480	MBh	120.5	124.0	134.3	144.1	117.7	121.2	131.1	140.8	114.9	118.3	128.0	137.4	112.1	115.4	124.9	134.1	106.5	109.6	118.7	127.3	98.6	101.5	109.9	118.0
		S/T	0.89	0.80	0.60	0.39	0.92	0.83	0.62	0.40	0.95	0.85	0.64	0.41	0.98	0.87	0.66	0.43	1.00	0.91	0.69	0.44	1.00	0.91	0.69	0.45
		KW	11.3	11.5	11.8	12.2	12.1	12.3	12.7	13.1	12.8	13.0	13.4	13.8	13.4	13.6	14.1	14.5	13.9	14.2	14.6	15.1	14.3	14.6	15.1	15.6
	4000	MBh	117.0	120.4	130.4	139.9	114.3	117.6	127.3	136.7	111.5	114.8	124.3	133.4	108.8	112.0	121.3	130.1	103.4	106.4	115.2	123.6	95.8	98.6	106.7	114.5
		S/T	0.85	0.76	0.57	0.37	0.88	0.79	0.60	0.38	0.90	0.81	0.61	0.39	0.93	0.83	0.63	0.41	0.97	0.86	0.65	0.42	0.98	0.87	0.66	0.42
		KW	11.2	11.4	11.8	12.1	12.0	12.2	12.6	13.0	12.7	12.9	13.3	13.7	13.3	13.5	14.0	14.4	13.8	14.1	14.5	14.9	14.2	14.5	15.0	15.4
	3520	MBh	111.1	114.4	123.8	132.9	108.5	111.8	121.0	129.8	106.0	109.1	118.1	126.7	103.4	106.4	115.2	123.6	98.2	101.1	109.4	117.5	91.0	93.7	101.4	108.8
		S/T	0.81	0.73	0.55	0.35	0.84	0.75	0.57	0.37	0.86	0.77	0.59	0.38	0.89	0.80	0.60	0.39	0.93	0.83	0.63	0.40	0.93	0.84	0.63	0.41
		KW	11.1	11.3	11.6	11.9	11.8	12.1	12.4	12.8	12.5	12.7	13.1	13.5	13.1	13.3	13.7	14.2	13.6	13.9	14.3	14.7	14.0	14.3	14.7	15.2
80	4480	MBh	122.6	125.3	133.9	143.1	119.8	122.4	130.8	139.8	116.9	119.5	127.6	136.4	114.1	116.6	124.5	133.1	108.4	110.7	118.3	126.5	100.4	102.6	109.6	117.1
		S/T	1.00	0.92	0.75	0.56	1.00	0.95	0.77	0.58	1.00	1.00	0.79	0.59	1.00	1.00	0.82	0.61	1.00	1.00	0.85	0.63	1.00	1.00	0.86	0.64
		KW	11.4	11.6	11.9	12.3	12.2	12.4	12.8	13.2	12.9	13.1	13.5	13.9	13.5	13.8	14.2	14.6	14.0	14.3	14.7	15.2	14.4	14.7	15.2	15.7
	4000	MBh	119.1	121.6	130.0	138.9	116.3	118.8	126.9	135.7	113.5	116.0	123.9	132.5	110.7	113.2	120.9	129.2	105.2	107.5	114.9	122.8	97.5	99.6	106.4	113.7
		S/T	0.93	0.87	0.71	0.53	0.97	0.91	0.74	0.55	0.99	0.93	0.76	0.56	1.00	0.96	0.78	0.58	1.00	0.99	0.81	0.61	1.00	1.00	0.82	0.61
		KW	11.3	11.5	11.8	12.2	12.1	12.3	12.7	13.1	12.8	13.0	13.4	13.8	13.4	13.6	14.1	14.5	13.9	14.2	14.6	15.1	14.3	14.6	15.1	15.6
	3520	MBh	113.1	115.6	123.5	132.0	110.5	112.9	120.6	128.9	107.8	110.2	117.7	125.8	105.2	107.5	114.9	122.8	99.9	102.1	109.1	116.6	92.6	94.6	101.1	108.0
		S/T	0.89	0.84	0.68	0.51	0.92	0.87	0.71	0.53	0.95	0.89	0.72	0.54	0.98	0.92	0.75	0.56	1.02	0.95	0.78	0.58	1.02	0.96	0.78	0.58
		KW	11.1	11.4	11.7	12.0	11.9	12.1	12.5	12.9	12.6	12.8	13.2	13.6	13.2	13.4	13.8	14.3	13.7	14.0	14.4	14.8	14.1	14.4	14.8	15.3
85	4480	MBh	124.8	127.2	133.2	142.1	121.9	124.2	130.1	138.8	119.0	121.3	127.0	135.5	116.1	118.3	123.9	132.2	110.3	112.4	117.7	125.6	102.1	104.1	109.0	116.3
		S/T	1.00	0.99	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.95	0.77	1.00	1.00	0.98	0.79	1.00	1.00	1.00	0.82	1.00	1.00	1.00	0.83
		KW	11.5	11.7	12.0	12.4	12.3	12.5	12.9	13.3	13.0	13.2	13.6	14.0	13.6	13.9	14.3	14.7	14.1	14.4	14.8	15.3	14.6	14.9	15.3	15.8
	4000	MBh	121.1	123.5	129.3	138.0	118.3	120.6	126.3	134.8	115.5	117.7	123.3	131.5	112.7	114.9	120.3	128.3	107.0	109.1	114.3	121.9	99.2	101.1	105.9	112.9
		S/T	0.98	0.94	0.85	0.69	1.00	0.98	0.88	0.72	1.00	1.00	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.97	0.79	1.00	1.00	0.98	0.79
		KW	11.4	11.6	11.9	12.3	12.2	12.4	12.8	13.2	12.9	13.1	13.5	13.9	13.5	13.8	14.2	14.6	14.0	14.3	14.7	15.2	14.4	14.7	15.2	15.7
	3520	MBh	115.1	117.3	122.9	131.1	112.4	114.6	120.0	128.0	109.7	111.8	117.1	125.0	107.0	109.1	114.3	121.9	101.7	103.7	108.6	115.8	94.2	96.0	100.6	107.3
		S/T	0.94	0.90	0.81	0.66	0.97	0.94	0.84	0.68	0.99	0.96	0.87	0.70	1.00	0.99	0.89	0.72	1.00	1.00	0.93	0.75	1.00	1.00	0.94	0.76
		KW	11.2	11.4	11.8	12.1	12.0	12.2	12.6	13.0	12.7	12.9	13.3	13.7	13.3	13.5	13.9	14.4	13.8	14.1	14.5	14.9	14.2	14.5	15.0	15.4

*EnteringIndoorTemperature-DegreesF.DryBulb

StandardRating

SATURATED SUCTION TEMP. - °F	OUTDOOR TEMPERATURE °F								
	75	80	85	90	95	100	105	110	115
	GROSS CONDENSER CAPACITY (MBTU/HR)								
35	116.70	113.85	111.00	108.04	105.02	102.07	98.94	95.41	91.95
40	128.42	125.33	122.18	119.05	115.41	112.36	108.64	105.00	101.00
45	140.82	137.20	133.75	130.11	126.95	123.01	119.11	115.00	110.78
50	153.98	150.22	146.46	142.58	138.60	134.47	130.21	125.79	121.14
	COMPRESSOR & CONDENSER FAN POWER (kW)								
35	8.89	9.33	9.77	10.25	10.79	11.33	11.90	12.49	13.11
40	10.14	10.57	11.03	11.52	12.01	12.57	13.13	13.72	14.88
45	10.38	10.81	11.27	11.76	12.31	12.82	13.39	13.99	14.60
50	10.61	11.08	11.55	12.04	12.58	13.13	13.66	14.26	14.90
	GROSS EER (GROSS CAPACITY ÷ COMPRESSER & FAN POWER)								
35	13.13	12.21	11.36	10.54	9.74	9.01	8.31	7.64	7.01
40	12.66	11.86	11.07	10.34	9.61	8.94	8.27	7.65	6.79
45	13.57	12.69	11.87	11.06	10.31	9.59	8.89	8.22	7.59
50	14.51	13.56	12.68	11.84	11.01	10.24	9.53	8.82	8.13

MODEL NUMBER IDENTIFICATION GUIDE

MODEL NUMBER	C	A	C	120	H	C	
							SALES CODE

PRODUCT FAMILY
C = Condenser

PRODUCT TYPE
A = Air Conditioning
H = Heat Pump
C = Cabinet

SERIES
C = Series

ELECTRICAL

CODE	VOLTS	PHASE	CYCLE
H	208/230	3	60
L	460	3	60
S	575	3	60

CAPACITY MBTUH
120 = 120,000

EXTENDED REFRIGERANT LINE CORRECTION FACTORS

Varying Line Length in Feet (m) vs. Total Capacity Multiplier

25 (8)	50 (15)	75 (23)	100 (30)	125 (38)	150 (46)
1.00	.99	.98	.96	.94	.92

VOLTAGE CORRECTION FACTORS

Volts	Capacity	Watts
208	.98	.99

MAXIMUM ALLOWABLE TONNAGE FOR EQUIVALENT LINE LENGTH

	Equivalent Line Length (Line + Valves + Fittings) - Type L Copper Tube			
O. D. (Inches)	25' (7.6m)	50' (15.2m)	75' (22.9m)	100' (30.5m)
Liquid 5/8"	13.7 Ton	9.4 Ton	7.4 Ton	n/a
Suction 1-1/8"	12.5 Ton	8.5 Ton	n/a	n/a
Suction 1-3/8"	12.4 Ton	14.6 Ton	11.6 Ton	10.0 Ton

NOTE: Equivalent suction line length is designed for a pressure drop due to friction equivalent to 2° F (1.1° C)

NOTES AND FORMULAS FOR USING EXPANDED PERFORMANCE DATA

To find leaving wet bulb and dry bulb from the expanded performance charts on the next two pages, use the following formulas. Direct interpolation is permissible. Do not extrapolate.

$$t_{db} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{wb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{wb}).

$$h_{wb} = h_{ewb} - \frac{\text{sensible capacity (Btuh)}}{4.5 \times \text{cfm}}$$

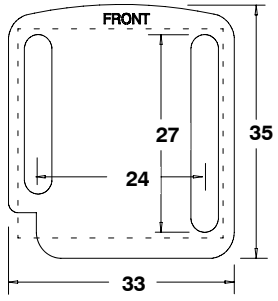
Where: h_{ewb} = Enthalpy of air entering evaporator coil.

LEGEND

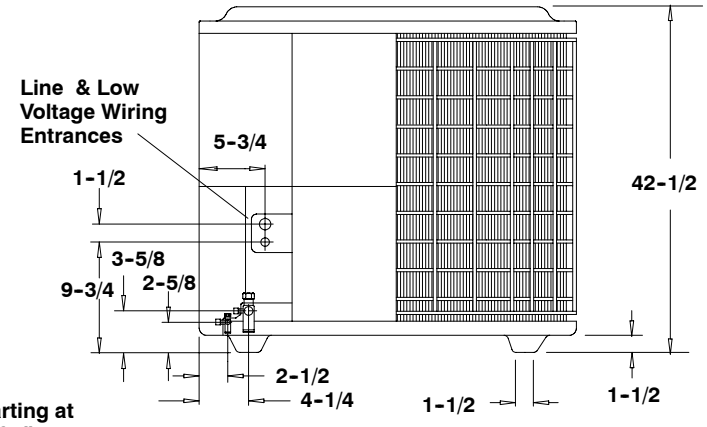
MBh = Total Capacity (Gross)
S/T = Sensible to Total Ratio
KW = Unit Operating Watts
IDB = Indoor Dry Bulb
t_{db} = Leaving Dry Bulb
t_{wb} = Leaving Wet Bulb
edb = Entering Dry Bulb
ewb = Entering Wet Bulb
h_{wb} = Enthalpy of leaving wet bulb

DIMENSIONS

ALL DIMENSIONS IN INCHES



Chassis #3



Minimum Mounting Pad Sizes with pad starting at 9" from structure for minimum clearance of 6".

Chassis #3 27" W X 28" D