Console (CCE) Series Submittal Data Models CCE07A - 19A Unit Revision: A

60Hz - R22 English Language/I-P Units



Rev.: 07/19/06D

ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-405-745-6000 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products. The latest version of this document is available at www.climatemaster.com.



Rev.: 07/19/06D



SUBMITTAL DATA - I-P UNITS
Unit Designation: Double Click Here
Job Name: Double Click Here
Architect: Double Click Here
Engineer: Double Click Here
Contractor: Double Click Here
PERFORMANCE DATA
Cooling Capacity: Double Click Here Btuh
EER: Double Click Here
Heating Capacity: Double Click Here Btuh
COP: Double Click Here
Ambient Air Temp: Double Click Here °F
Entering Water Temp (Clg): Double Click Here °F
Entering Air Temp (Clg): Double Click Here °F
Entering Water Temp (Htg): Double Click Here °F
Entering Air Temp (Htg): Double Click Here °F
Airflow: Double Click Here CFM
Fan Speed or Motor/RPM/Turns: Double Click Here
Operating Weight: Double Click Here (lb)
ELECTRICAL DATA
Power Supply: Click Volts Click Phase Click Hz
Minimum Circuit Ampacity: Click
Maximum Overcurrent Protection: Click

Console (CCE) Series Submittal Data Models CCE07A - 19A Unit Revision: A 60Hz - R22

English Language/S-I Units



Rev.: 07/19/06D

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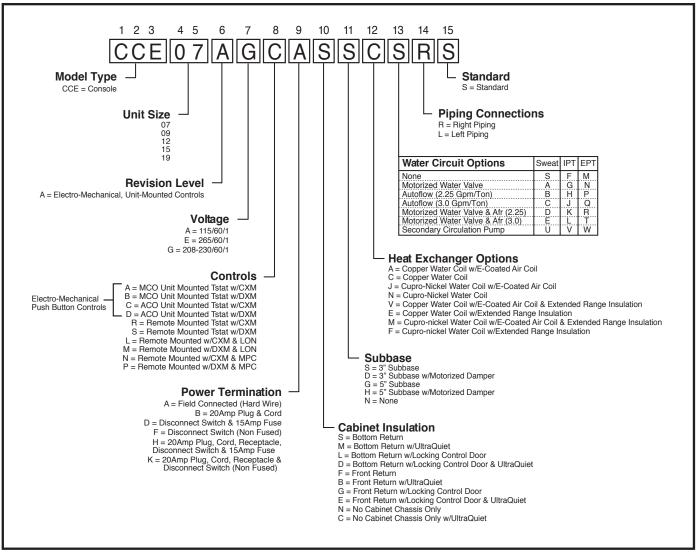
Rev.: 07/19/06D



SUBMITTAL DATA - S-I UNITS
Unit Designation: Double Click Here
Job Name: Double Click Here
Architect: Double Click Here
Engineer: Double Click Here
Contractor: Double Click Here
PERFORMANCE DATA
Cooling Capacity: Double Click Here kW
EER: Double Click Here
Heating Capacity: Double Click Here kW
COP: Double Click Here
Ambient Air Temp: Double Click Here °C
Entering Water Temp (Clg): Double Click Here °C
Entering Air Temp (Clg): Double Click Here °C
Entering Water Temp (Htg): Double Click Here °C
Entering Air Temp (Htg): Double Click Here °C
Airflow: Double Click Here I/s
Fan Speed or Motor/RPM/Turns: Double Click Here
Operating Weight: Double Click Here (kg)
ELECTRICAL DATA
Power Supply: Click Volts Click Phase Click Hz
Minimum Circuit Ampacity: Click
Maximum Overcurrent Protection: Click



CCE Series Nomenclature (Rev. A)



Rev.: 06/01/06D



Performance Data ARI/ASHRAE/ISO 13256-1

ASHRAE/ARI/ISO 13256-1. English (IP) Units

	W	ater Loop	Heat Pum	пр	Gro	ound Wate	er Heat Pu	mp	Ground Loop Heat Pump				
Model	Coolin	g 86°F	Heating 68°F		Cooling 59°F		Heating 50°F		Coolin	g 77°F	Heating 32°F		
	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	
CCE07	7,800	12.1	10,400	4.9	8,900	19.5	8,400	4.3	8,000	14.0	6,500	3.6	
CCE09	9,300	12.0	12,000	4.4	10,300	18.1	9,700	3.8	10,000	14.0	7,800	3.4	
CCE12	12,300	11.6	15,000	4.4	13,700	17.8	12,400	3.8	12,800	13.4	9,800	3.3	
CCE15	13,800	11.8	17,300	4.4	15,200	17.3	14,000	3.8	14,100	13.5	11,000	3.3	
CCE19	16,000	12.0	19,300	4.2	17,800	17.3	16,000	3.7	16,400	13.4	12,500	3.1	

Cooling capacities based upon $80.6^{\circ}F$ DB, $66.2^{\circ}F$ WB entering air temperature Heating capacities based upon $68^{\circ}F$ DB, $59^{\circ}F$ WB entering air temperature All air flow is rated on high speed

All ratings based upon operation at lower voltage of dual voltage rated models

ASHRAE/ARI/ISO 13256-1. Metric (SI) Units

	W	ater Loop	Heat Pun	пр	Gro	ound Wate	er Heat Pu	mp	Ground Loop Heat Pump				
Model	Cooling	g 30°C	Heatin	Heating 20°C		g 15°C	Heating 10°C		Cooling	g 25°C	Heating 0°C		
	Capacity Watts	EER W/W	Capacity Watts	COP	Capacity Watts	EER W/W	Capacity Watts	COP	Capacity Watts	EER W/W	Capacity Watts	COP	
CCE07	2,286	3.5	3,048	4.9	2,608	5.7	2,462	4.3	2,345	4.1	1,905	3.6	
CCE09	2,726	3.5	3,517	4.4	3,019	5.3	2,843	3.8	2,931	4.1	2,286	3.4	
CCE12	3,605	3.4	4,396	4.4	4,015	5.2	3,634	3.8	3,751	3.9	2,872	3.3	
CCE15	4,045	3.5	5,070	4.4	4,455	5.1	4,103	3.8	4,132	4.0	3,224	3.3	
CCE19	4,689	3.5	5,657	4.2	5,217	5.1	4,689	3.7	4,807	3.9	3,664	3.1	

Cooling capacities based upon 27°C DB, 19°C WB entering air temperature Heating capacities based upon 20°C DB, 15°C WB entering air temperature All air flow is rated on high speed

All ratings based upon operation at lower voltage of dual voltage rated models



Performance Data Selection Notes

For operation in the shaded area when water is used in lieu of an anti-freeze solution, the LWT (Leaving Water Temperature) must be calculated. Flow must be maintained to a level such that the LWT is maintained above 42°F [5.6°C] when the JW3 jumper is not clipped (see example below). This is due to the potential of the refrigerant temperature being as low as 32°F [0°C] with 40°F [4.4°C] LWT, which may lead to a nuisance cutout due to the activation of the Low Temperature Protection. JW3 should never be clipped for standard range equipment or systems without antifreeze.

Exa	m	bl	е	:

At 50°F EWT (Entering Water Temperature) and 1.5 gpm/ton, a 3 ton unit has a HE of 22,500 Btuh. To calculate LWT, rearrange the formula for HE as follows:

 $HE = TD \times GPM \times 500$, where HE = Heat of Extraction (Btuh); TD = temperature difference (EWT - LWT) and GPM = U.S. Gallons per Minute.

 $TD = HE / (GPM \times 500)$

 $TD = 22,500 / (4.5 \times 500)$

 $TD = 10^{\circ}F$

LWT = EWT - TD

 $LWT = 50 - 10 = 40^{\circ}F$

			Heatir	ng - EA	T 70°F	
/	EER	НС	kW	HE	LAT	COP
∌d		5.5	0.50	3.8	91.0	3.22
6.9	26.7	6.0	0.51	4.3	93.1	3.44
10.9	29.9	6.3	0.52	4.5	94.1	3.55
10.9	31.7	6.4	0.52	4.7	94.8	3.62
10.8	22.9	6.9	0.53	5.1	96.5	3.79
0.9	25.8	7.2	0.54	5.4	97.9	3.91
.9	27.4	7.4	0.55	5.6	98.6	3.97
	19.6	7.8	0.56	5.9	100.0	4.10
`	22.1	8.2	0.57	6.3	101.6	4.23
		8.4	0.57	6.5	102.4	4.30
		7	0.58	6.7	103.6	42

In this example, a higher flow rate will be required for EWTs at or below $50^{\circ}F$ without antifreeze. At 2 gpm/ton, the calculation above results in a TD of 7.5. LWT = $50 - 7.5 = 42.5^{\circ}F$, which is above $42^{\circ}F$ EWT, and is acceptable for this application.



Performance Data CCE07

240 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

			240 CFM N	Ullillai (ha	ileu) All IIO	v							Performance capacities shown in thousands of Btul				ilius oi biuli
	D Adde orized V		EWT	GPM	WF	PD*		Coc	ling - E	AT 80/6	67°F			Heatir	ng - EA	Г 70°F	
	CCE07	,	°F	GI W	PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
	Cv = 4.9 PD = 12		20	1.9	3.7	8.5		Operat	tion Not I	Recomm	nended		5.5	0.50	3.8	91.0	3.22
		Adder		1.0	1.4	3.2	9.7	6.9	0.71	0.36	10.9	26.7	6.0	0.51	4.3	93.1	3.44
GPM	PSI	FT	30	1.4	2.2	5.1	9.8	6.9	0.70	0.33	10.9	29.9	6.3	0.52	4.5	94.1	3.55
1.0	0.20	0.47		1.9	3.3	7.6	9.9	6.9	0.70	0.31	10.9	31.7	6.4	0.52	4.7	94.8	3.62
1.4	0.44	1.00		1.0	1.0	2.3	9.4	6.8	0.72	0.41	10.8	22.9	6.9	0.53	5.1	96.5	3.79
1.9	0.87	2.00	40	1.4	1.5	3.5	9.6	6.9	0.71	0.37	10.9	25.8	7.2	0.54	5.4	97.9	3.91
				1.9	2.1	4.9	9.7	6.9	0.71	0.36	10.9	27.4	7.4	0.55	5.6	98.6	3.97
				1.0	0.9	2.1	9.0	6.7	0.74	0.46	10.6	19.6	7.8	0.56	5.9	100.0	4.10
			50	1.4	1.4	3.2	9.3	6.8	0.73	0.42	10.8	22.1	8.2	0.57	6.3	101.6	4.23
				1.9	2.0	4.6	9.5	6.8	0.72	0.40	10.8	23.4	8.4	0.57	6.5	102.4	4.30
				1.0	8.0	1.8	8.6	6.5	0.76	0.52	10.4	16.6	8.7	0.58	6.7	103.6	4.39
			60	1.4	1.3	3.0	8.9	6.6	0.74	0.48	10.5	18.8	9.2	0.59	7.2	105.4	4.53
				1.9	1.9	4.4	9.1	6.7	0.74	0.46	10.6	20.0	9.4	0.60	7.4	106.3	4.61
				1.0	0.7	1.6	8.1	6.3	0.78	0.58	10.1	14.0	9.6	0.61	7.6	107.1	4.67
			70	1.4	1.2	2.8	8.5	6.5	0.76	0.53	10.3	15.9	10.2	0.62	8.1	109.1	4.82
				1.9	1.8	4.2	8.6	6.5	0.76	0.51	10.4	16.9	10.5	0.63	8.3	110.2	4.90
				1.0	0.7	1.6	7.6	6.1	0.79	0.65	9.8	11.8	10.6	0.63	8.4	110.7	4.93
			80	1.4	1.1	2.5	8.0	6.2	0.78	0.60	10.0	13.3	11.1	0.64	9.0	112.9	5.10
				1.9	1.6	3.7	8.1	6.3	0.78	0.57	10.1	14.2	11.5	0.65	9.3	114.1	5.19
				1.0	0.6	1.4	7.4	5.9	0.80	0.68	9.7	10.8	11.0	0.64	8.9	112.5	5.06
			85	1.4	1.0	2.3	7.7	6.1	0.79	0.63	9.9	12.2	11.6	0.65	9.4	114.8	5.24
				1.9	1.5	3.5	7.9	6.2	0.78	0.61	10.0	13.0	12.0	0.66	9.7	116.1	5.33
				1.0	0.6	1.4	7.2	5.8	0.81	0.72	9.6	9.9	11.5	0.65	9.3	114.2	5.19
			90	1.4	1.0	2.3	7.5	6.0	0.80	0.67	9.8	11.1	12.1	0.66	9.9	116.7	5.38
				1.9	1.4	3.2	7.6	6.1	0.79	0.64	9.8	11.9	12.5	0.67	10.2	118.0	5.48
				1.0	0.5	1.2	6.7	5.5	0.81	0.81	9.5	8.3					
			100	1.4	0.9	2.1	7.0	5.7	0.81	0.75	9.6	9.3					
				1.9	1.3	3.0	7.2	5.8	0.81	0.72	9.6	9.9		eration l	Not Ros	ommon	ded
				1.0	0.5	1.2	6.4	5.2	0.81	0.91	9.5	7.0	- Ot	eralion i	NOT HEC	ommenc	Jeu
			110	1.4	0.9	2.1	6.6	5.4	0.81	0.84	9.5	7.8					
				1.9	1.3	3.0	6.7	5.5	0.81	0.81	9.5	8.3					

Interpolation is permissible; extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating. ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.

Table does not reflect fan or pump power corrections for ARI/ISO conditions.

All performance is based upon the lower voltage of dual voltage rated units.

Operation below 40°F EWT is based upon a 15% antifreeze solution.

Operation below 60°F EWT requires optional insulated water/refrigerant circuit (standard on residential models).

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation in shaded areas.

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Performance Data CCE09

300 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*****			300 CFM N	ominai (Ra			Cooling - EAT 80/67°F						Heating - EAT 70°F				ilius oi biuli
	D Adde		EWT	GPM	WI	PD*		Coo	oling - E	AT 80/6	67°F			Heatir	ıg - EA	Т 70°F	
	CCE09)	°F	GI W	PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
	Cv = 4.9 PD = 129		20	2.5	6.2	14.3		Operat	tion Not I	Recomm	nended		7.2	0.63	5.1	92.3	3.35
		Adder		1.3	1.8	4.2	11.3	7.6	0.67	0.48	13.0	23.8	7.5	0.66	5.2	93.0	3.34
GPM	PSI	FT	30	1.9	3.2	7.4	11.7	7.7	0.66	0.44	13.2	26.5	7.6	0.67	5.4	93.5	3.36
1.0	0.34			2.5	5.0	11.6	11.9	7.8	0.66	0.42	13.3	28.1	7.7	0.67	5.4	93.8	3.38
1.3 1.9	0.80	0.80		1.3	1.5	3.5	10.9	7.4	0.68	0.54	12.8	20.4	8.1	0.69	5.8	95.1	3.46
2.5	1.50	3.46	40	1.9	2.6	6.0	11.2	7.5	0.67	0.49	12.9	22.6	8.4	0.70	6.0	95.9	3.52
2.5	1.50	3.40	1	2.5	4.0	9.2	11.3	7.6	0.67	0.47	13.0	23.9	8.6	0.71	6.2	96.4	3.56
				1.3	1.3	3.0	10.6	7.2	0.68	0.60	12.6	17.6	9.1	0.72	6.6	97.9	3.67
			50	1.9	2.5	5.8	10.8	7.3	0.68	0.56	12.7	19.4	9.4	0.73	6.9	99.1	3.77
				2.5	3.9	9.0	10.9	7.4	0.67	0.53	12.8	20.5	9.7	0.74	7.1	99.7	3.82
				1.3	1.2	2.8	10.2	7.1	0.69	0.67	12.5	15.2	10.1	0.75	7.6	101.2	3.94
			60	1.9	2.4	5.5	10.4	7.2	0.69	0.62	12.6	16.8	10.6	0.77	8.0	102.7	4.05
				2.5	3.7	8.5	10.6	7.2	0.68	0.60	12.6	17.6	10.9	0.77	8.2	103.5	4.12
				1.3	1.2	2.8	9.8	6.9	0.71	0.75	12.4	13.1	11.3	0.79	8.6	104.8	4.21
			70	1.9	2.2	5.1	10.1	7.0	0.70	0.70	12.5	14.4	11.9	0.80	9.1	106.6	4.34
				2.5	3.5	8.1	10.2	7.1	0.69	0.67	12.5	15.2	12.2	0.81	9.4	107.5	4.42
				1.3	1.1	2.5	9.3	6.8	0.73	0.83	12.1	11.2	12.5	0.82	9.7	108.4	4.48
			80	1.9	2.1	4.9	9.6	6.9	0.71	0.78	12.3	12.4	13.1	0.83	10.3	110.4	4.61
				2.5	3.2	7.5	9.8	6.9	0.71	0.75	12.4	13.1	13.5	0.84	10.6	111.5	4.68
				1.3	1.1	2.5	9.0	6.7	0.74	0.87	12.0	10.3	13.1	0.83	10.2	110.3	4.60
			85	1.9	2.0	4.6	9.4	6.8	0.72	0.82	12.2	11.5	13.7	0.85	10.8	112.3	4.73
				2.5	3.1	7.2	9.6	6.9	0.72	0.79	12.3	12.1	14.1	0.86	11.2	113.4	4.79
				1.3	1.0	2.3	8.7	6.5	0.75	0.92	11.8	9.4	13.7	0.85	10.8	112.1	4.71
			90	1.9	2.0	4.6	9.1	6.7	0.74	0.86	12.0	10.5	14.3	0.87	11.4	114.1	4.83
				2.5	3.0	6.9	9.3	6.8	0.73	0.83	12.1	11.1	14.7	0.88	11.7	115.2	4.89
				1.3	1.0	2.3	7.9	6.2	0.79	1.01	11.3	7.8					
			100	1.9	1.9	4.4	8.4	6.4	0.77	0.95	11.6	8.8					
				2.5	3.0	6.9	8.6	6.5	0.76	0.92	11.8	9.4					
				1.3	1.0	2.3	6.9	5.7	0.83	1.10	10.7	6.3	Op	eration	Not Rec	ommend	ded
			110	1.9	1.9	4.4	7.5	6.0	0.80	1.04	11.1	7.2					
				2.5	3.0	6.9	7.8	6.2	0.79	1.02	11.3	7.7					

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LC291A

Performance Data CCE₁₂

Page _____ of ____

350 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

WPD Adder for Motorized Valve,			EWT	Jillilai (i ta		PD		Coc	oling - E	AT 80/6	7°F			Heatir	ng - EA		
	orized V CCE12		°F	GPM	PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	НС	kW	HE	LAT	СОР
	Cv = 4.9 PD = 12		20	3.1	9.1	21.0		Opera	tion Not I	Recomm	nended		8.7	0.78	6.0	93.0	3.26
IVIOI	I	Adder		1.6	2.5	5.8	14.8	9.8	0.66	0.60	16.8	24.6	9.4	0.81	6.6	94.8	3.39
GPM	PSI	FT	30	2.3	4.4	10.2	14.9	9.9	0.66	0.55	16.8	27.1	9.7	0.83	6.9	95.7	3.46
1.6	0.52	1.21		3.1	7.2	16.6	15.0	9.9	0.66	0.53	16.8	28.4	9.9	0.83	7.1	96.2	3.49
2.3	1.17	2.71		1.6	2.0	4.6	14.4	9.6	0.67	0.68	16.7	21.3	10.6	0.86	7.7	97.9	3.63
3.1	2.31	5.33	40	2.3	3.5	8.1	14.7	9.7	0.66	0.62	16.8	23.7	11.0	0.87	8.0	99.1	3.71
0.1	2.01	0.00		3.1	5.7	13.2	14.8	9.8	0.66	0.59	16.8	24.9	11.2	0.88	8.3	99.7	3.76
				1.6	1.9	4.4	14.0	9.5	0.68	0.76	16.6	18.3	11.8	0.89	8.8	101.2	3.88
			50	2.3	3.4	7.9	14.3	9.6	0.67	0.70	16.7	20.4	12.3	0.91	9.2	102.5	3.98
				3.1	5.5	12.7	14.5	9.6	0.67	0.67	16.7	21.6	12.6	0.92	9.5	103.2	4.03
				1.6	1.8	4.2	13.5	9.3	0.69	0.86	16.4	15.6	13.1	0.93	9.9	104.5	4.13
			60	2.3	3.4	7.9	13.8	9.4	0.68	0.79	16.5	17.5	13.6	0.94	10.4	106.0	4.24
				3.1	5.3	12.2	14.0	9.5	0.68	0.76	16.6	18.5	13.9	0.95	10.7	106.8	4.30
				1.6	1.7	3.9	12.9	9.1	0.71	0.97	16.2	13.2	14.3	0.96	11.0	107.8	4.38
			70	2.3	3.0	6.9	13.3	9.2	0.69	0.90	16.3	14.8	14.9	0.97	11.6	109.3	4.50
				3.1	4.6	10.6	13.5	9.3	0.69	0.86	16.4	15.7	15.2	0.98	11.9	110.1	4.56
				1.6	1.6	3.7	12.2	8.9	0.73	1.10	15.9	11.1	15.5	0.98	12.1	110.8	4.62
			80	2.3	2.8	6.5	12.7	9.0	0.71	1.01	16.1	12.5	16.0	0.99	12.7	112.4	4.74
				3.1	4.4	10.2	12.9	9.1	0.71	0.97	16.2	13.3	16.3	1.00	12.9	113.1	4.80
				1.6	1.5	3.5	11.8	8.8	0.74	1.16	15.8	10.2	16.0	0.99	12.6	112.2	4.73
			85	2.3	2.7	6.2	12.3	8.9	0.72	1.07	16.0	11.5	16.6	1.00	13.2	113.7	4.85
				3.1	4.4	10.2	12.6	9.0	0.72	1.03	16.1	12.2	16.9	1.01	13.4	114.5	4.91
				1.6	1.4	3.2	11.5	8.6	0.75	1.23	15.7	9.3	16.5	1.00	13.1	113.6	4.83
			90	2.3	2.6	6.0	12.0	8.8	0.73	1.14	15.8	10.5	17.1	1.01	13.6	115.0	4.95
				3.1	4.3	9.9	12.2	8.9	0.73	1.09	15.9	11.2	17.3	1.01	13.9	115.7	5.01
				1.6	1.4	3.2	10.7	8.4	0.78	1.37	15.4	7.8					
			100	2.3	2.6	6.0	11.2	8.6	0.76	1.27	15.6	8.8					
				3.1	4.3	9.9	11.5	8.6	0.75	1.23	15.7	9.4	Or	eration	Not Bec	ommen	ded
				1.6	1.4	3.2	9.9	8.1	0.82	1.52	15.1	6.5	O	Operation Not Recommended			, o u
			110	2.3	2.6	6.0	10.4	8.3	0.79	1.42	15.3	7.3					
				3.1	4.3	9.9	10.7	8.4	0.78	1.37	15.4	7.8					

Interpolation is permissible; extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating. ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.

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Performance Data CCE₁₅

400 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

	3.10 3.20 3.26 3.29 3.44 3.53 3.57 3.72 3.84 3.90 4.03 4.17
CCE15 (CV = 4.9, MOPD = 125 psi) MOPD = 125 psi) 20	3.10 3.20 3.26 3.29 3.44 3.53 3.57 3.72 3.84 3.90 4.03 4.17
MOPD = 125 psi) WPD Adder PSI FT 1.8	3.20 3.26 3.29 3.44 3.53 3.57 3.72 3.84 3.90 4.03 4.17
GPM WPD Adder 30 2.7 2.6 6.0 16.6 11.1 0.67 0.62 18.7 26.6 10.7 0.96 7.4 94.8 1.8 0.66 1.53 3.6 4.2 9.7 16.6 11.0 0.67 0.60 18.6 27.6 10.9 0.97 7.6 95.2 2.7 1.62 3.74 40 2.7 2.3 5.3 16.5 11.2 0.68 0.70 18.9 23.6 12.1 1.00 8.7 97.9 3.6 3.1 7.18 40 2.7 2.3 5.3 16.5 11.2 0.68 0.70 18.9 23.6 12.1 1.00 8.7 97.9 3.6 3.6 3.6 8.3 16.5 11.2 0.67 0.67 18.9 23.6 12.1 1.00 8.7 97.9 4 1.8 1.2 2.8 15.8 11.0 0.69 0.78 18.8 20.	3.26 3.29 3.44 3.53 3.57 3.72 3.84 3.90 4.03 4.17
GPM PSI FT 30 2.7 2.6 6.0 16.6 11.1 0.67 0.62 18.7 26.6 10.7 0.96 7.4 94.8 1.8 0.66 1.53 3.6 4.2 9.7 16.6 11.0 0.67 0.60 18.6 27.6 10.9 0.97 7.6 95.2 2.7 1.62 3.74 3.6 3.6 3.3 16.5 11.1 0.68 0.76 18.9 21.5 11.6 0.99 8.2 96.9 3.6 3.6 3.6 3.3 16.5 11.2 0.67 0.67 18.9 23.6 12.1 1.00 8.7 97.9 3.6 3.6 3.5 8.1 16.2 11.1 0.69 0.78 18.8 24.6 12.3 1.01 10.4 3.6 3.5 8.1 16.2 11.1 0.69 0.78 18.8 24.6 12.3 10.1 10.4 4.0 </td <td>3.29 3.44 3.53 3.57 3.72 3.84 3.90 4.03 4.17</td>	3.29 3.44 3.53 3.57 3.72 3.84 3.90 4.03 4.17
1.8	3.44 3.53 3.57 3.72 3.84 3.90 4.03 4.17
1.8	3.53 3.57 3.72 3.84 3.90 4.03 4.17
3.6	3.57 3.72 3.84 3.90 4.03 4.17
1.8 1.2 2.8 15.8 11.0 0.70 0.85 18.7 18.7 13.1 1.03 9.6 100.2 50 2.7 2.2 5.1 16.2 11.1 0.69 0.78 18.8 20.6 13.7 1.05 10.1 101.6 3.6 3.5 8.1 16.3 11.1 0.68 0.75 18.9 21.6 14.0 1.05 10.4 102.4 1.8 1.2 2.8 15.2 10.8 0.71 0.94 18.4 16.1 14.7 1.07 11.1 104.6 60 2.7 2.1 4.9 15.6 10.9 0.70 0.87 18.6 17.9 15.4 1.09 11.7 105.3 3.6 3.4 7.9 15.8 11.0 0.69 0.84 18.7 18.8 15.8 1.09 12.1 106.6 1.8 1.1 2.5 14.3 10.5 0.73 1.04 17.9 13.7 16.4 1.10 12.6 107.8 70 2.7 2.0 4.6 14.9 10.7 0.72 0.97 18.2 15.3 17.2 1.12 13.4 109.3 3.6 3.2 7.4 15.2 10.8 0.71 0.94 18.4 16.1 17.6 1.13 13.8 110.3 1.8 1.1 2.5 13.4 10.2 0.76 1.16 17.3 11.6 18.0 1.13 14.1 111.6 80 2.7 2.0 4.6 14.0 10.4 0.74 1.08 17.7 13.0 18.8 1.15 14.9 113.5 3.6 3.1 7.2 14.3 10.5 0.73 1.05 17.9 13.7 19.3 1.15 15.3 114.5 1.8 1.1 2.5 12.9 10.0 0.78 1.21 17.0 10.6 18.8 1.14 14.8 113.3 85 2.7 1.9 4.4 13.5 10.3 0.76 1.14 17.4 11.9 19.6 1.15 15.6 115.2 3.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	3.72 3.84 3.90 4.03 4.17
50 2.7 2.2 5.1 16.2 11.1 0.69 0.78 18.8 20.6 13.7 1.05 10.1 101.6 3.6 3.5 8.1 16.3 11.1 0.68 0.75 18.9 21.6 14.0 1.05 10.4 102.4 1.8 1.2 2.8 15.2 10.8 0.71 0.94 18.4 16.1 14.7 1.07 11.1 104.0 60 2.7 2.1 4.9 15.6 10.9 0.70 0.87 18.6 17.9 15.4 1.09 11.7 105.7 3.6 3.4 7.9 15.8 11.0 0.69 0.84 18.7 18.8 15.8 1.09 12.1 106.6 1.8 1.1 2.5 14.3 10.5 0.73 1.04 17.9 13.7 16.4 1.10 12.6 107.8 70 2.7 2.0 4.6 14.9 10.7 0.72 0.97 18.2 15.3 17.2 1.12 13.4 109.3 3.6 3.2	3.84 3.90 4.03 4.17
3.6 3.5 8.1 16.3 11.1 0.68 0.75 18.9 21.6 14.0 1.05 10.4 102.4 1.8 1.2 2.8 15.2 10.8 0.71 0.94 18.4 16.1 14.7 1.07 11.1 104.0 60 2.7 2.1 4.9 15.6 10.9 0.70 0.87 18.6 17.9 15.4 1.09 11.7 105.3 3.6 3.4 7.9 15.8 11.0 0.69 0.84 18.7 18.8 15.8 1.09 12.1 106.6 1.8 1.1 2.5 14.3 10.5 0.73 1.04 17.9 13.7 16.4 1.10 12.6 107.8 70 2.7 2.0 4.6 14.9 10.7 0.72 0.97 18.2 15.3 17.2 1.12 13.4 109.3 3.6 3.2 7.4 15.2 10.8 0.71 0.94 18.4 16.1 17.6 1.13 14.1 11.6 80 2.7 2.0<	3.90 4.03 4.17
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60 2.7 2.1 4.9 15.6 10.9 0.70 0.87 18.6 17.9 15.4 1.09 11.7 105.7 3.6 3.4 7.9 15.8 11.0 0.69 0.84 18.7 18.8 15.8 1.09 12.1 106.6 107.8 1.8 1.1 2.5 14.3 10.5 0.73 1.04 17.9 13.7 16.4 1.10 12.6 107.8 1.8 1.1 2.5 14.9 10.7 0.72 0.97 18.2 15.3 17.2 1.12 13.4 109.7 1.8 1.1 2.5 13.4 10.2 0.76 1.16 17.3 11.6 18.0 1.13 13.8 110.7 18.8 1.1 2.5 13.4 10.2 0.76 1.16 17.3 11.6 18.0 1.13 14.1 11.6 18.0 1.13 14.1 11.1 11.6 18.0 1.13 14.1 11.1 11.6 18.0 1.13 14.1 11.1 11.6 18.0 11.3 14.1 11.1 11.6 18.0 11.3 14.1 11.1 11.6 18.0 11.3 14.1 14.8 113.3 14.1 14.1 14.8 113.3 14.1 14.1 14.1 14.1 14.1 14.1 14.	4.17
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1.8 1.1 2.5 14.3 10.5 0.73 1.04 17.9 13.7 16.4 1.10 12.6 107.8 17.0 2.7 2.0 4.6 14.9 10.7 0.72 0.97 18.2 15.3 17.2 1.12 13.4 109.7 18.8 1.1 2.5 13.4 10.2 0.76 1.16 17.3 11.6 18.0 1.13 14.1 11.6 18.0 1.13 14.1 11.6 18.0 1.13 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.8 113.3 14.1 14.1 14.8 113.3 14.1 14.1 14.8 113.3 14.1 14.1 14.8 113.3 14.1 14.1 14.1 14.1 14.1 14.1 14.	4.24
70 2.7 2.0 4.6 14.9 10.7 0.72 0.97 18.2 15.3 17.2 1.12 13.4 109.7 3.6 3.2 7.4 15.2 10.8 0.71 0.94 18.4 16.1 17.6 1.13 13.8 110.7 1.8 1.1 2.5 13.4 10.2 0.76 1.16 17.3 11.6 18.0 1.13 14.1 111.6 80 2.7 2.0 4.6 14.0 10.4 0.74 1.08 17.7 13.0 18.8 1.15 14.9 113.5 3.6 3.1 7.2 14.3 10.5 0.73 1.05 17.9 13.7 19.3 1.15 15.3 114.5 1.8 1.1 2.5 12.9 10.0 0.78 1.21 17.0 10.6 18.8 1.14 14.8 113.3 85 2.7 1.9 4.4 13.5 10.3 0.76 1.14 17.4 11.9 19.6 1.15 15.6 115.2 3.6 3.0	
3.6 3.2 7.4 15.2 10.8 0.71 0.94 18.4 16.1 17.6 1.13 13.8 110.7 1.8 1.1 2.5 13.4 10.2 0.76 1.16 17.3 11.6 18.0 1.13 14.1 111.6 80 2.7 2.0 4.6 14.0 10.4 0.74 1.08 17.7 13.0 18.8 1.15 14.9 113.5 3.6 3.1 7.2 14.3 10.5 0.73 1.05 17.9 13.7 19.3 1.15 15.3 114.5 1.8 1.1 2.5 12.9 10.0 0.78 1.21 17.0 10.6 18.8 1.14 14.8 113.3 85 2.7 1.9 4.4 13.5 10.3 0.76 1.14 17.4 11.9 19.6 1.15 15.6 115.2 3.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	4.34
1.8 1.1 2.5 13.4 10.2 0.76 1.16 17.3 11.6 18.0 1.13 14.1 111.6 18.0 2.7 2.0 4.6 14.0 10.4 0.74 1.08 17.7 13.0 18.8 1.15 14.9 113.5 3.6 3.1 7.2 14.3 10.5 0.73 1.05 17.9 13.7 19.3 1.15 15.3 114.5 18.8 1.1 2.5 12.9 10.0 0.78 1.21 17.0 10.6 18.8 1.14 14.8 113.3 18.5 2.7 1.9 4.4 13.5 10.3 0.76 1.14 17.4 11.9 19.6 1.15 15.6 115.2 3.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	4.50
80 2.7 2.0 4.6 14.0 10.4 0.74 1.08 17.7 13.0 18.8 1.15 14.9 113.5 13.6 3.1 7.2 14.3 10.5 0.73 1.05 17.9 13.7 19.3 1.15 15.3 114.5 18.8 1.1 2.5 12.9 10.0 0.78 1.21 17.0 10.6 18.8 1.14 14.8 113.3 13.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	4.58
3.6 3.1 7.2 14.3 10.5 0.73 1.05 17.9 13.7 19.3 1.15 15.3 114.5 1.8 1.1 2.5 12.9 10.0 0.78 1.21 17.0 10.6 18.8 1.14 14.8 113.3 85 2.7 1.9 4.4 13.5 10.3 0.76 1.14 17.4 11.9 19.6 1.15 15.6 115.2 3.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	4.65
1.8 1.1 2.5 12.9 10.0 0.78 1.21 17.0 10.6 18.8 1.14 14.8 113.3 85 2.7 1.9 4.4 13.5 10.3 0.76 1.14 17.4 11.9 19.6 1.15 15.6 115.2 3.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	4.82
85 2.7 1.9 4.4 13.5 10.3 0.76 1.14 17.4 11.9 19.6 1.15 15.6 115.2 3.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	4.91
3.6 3.0 6.9 13.9 10.4 0.75 1.10 17.6 12.6 20.0 1.16 16.0 116.1	4.80
	4.98
40 40 00 400 00 407 407 07 405 115 115	5.07
1.8 1.0 2.3 12.3 9.9 0.80 1.27 16.7 9.7 19.5 1.15 15.5 115.0	4.95
90 2.7 1.9 4.4 13.0 10.1 0.78 1.20 17.1 10.9 20.2 1.16 16.3 116.7	5.13
3.6 3.0 6.9 13.4 10.2 0.76 1.16 17.3 11.5 20.6 1.16 16.6 117.6	5.22
1.8 1.0 2.3 11.1 9.4 0.85 1.40 15.9 8.0	
100 2.7 1.8 4.2 11.9 9.7 0.82 1.32 16.4 9.0	
3.6 2.9 6.7 12.2 9.8 0.80 1.28 16.6 9.5 Operation Not Recomme	nded
1.8 1.0 2.3 9.8 8.9 0.91 1.53 15.0 6.4	laoa
110 2.7 1.8 4.2 10.6 9.2 0.87 1.45 15.5 7.3	
3.6 2.9 6.7 11.0 9.4 0.85 1.41 15.8 7.8	

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Performance Data CCE₁₉

460 CFM Nominal (Rated) Airflow

Performance capacities shown in thousands of Btuh

*\^/	D A 12		460 CFM N					_				l	Heating - EAT 70°F				
	D Adde rized V		EWT	GPM	Wi	PD*		Coo	ling - E	AT 80/6	67°F			Heatir	ng - EA	⊺ 70°F	
	CCE19		°F	<u> </u>	PSI	FT	TC	SC	Sens/Tot Ratio	kW	HR	EER	HC	kW	HE	LAT	COP
	Cv = 4.9 D = 129		20	4.8	7.9	18.2		Operat	ion Not F	Recomn	nended		11.2	1.05	7.6	92.5	3.13
	WPD			2.4	2.1	4.9	20.1	13.2	0.66	0.81	22.8	24.7	12.2	1.09	8.5	94.6	3.30
GPM	PSI	FT	30	3.6	4.2	9.7	20.5	13.4	0.66	0.76	23.1	26.9	12.6	1.10	8.9	95.3	3.36
2.4	1.17	2.71		4.8	6.8	15.7	20.7	13.5	0.65	0.74	23.2	28.1	12.8	1.11	9.0	95.7	3.40
3.6	2.88	6.64		2.4	2.0	4.6	19.4	12.9	0.66	0.90	22.5	21.6	13.8	1.14	9.9	97.8	3.54
4.8	5.53	12.77	40	3.6	3.8	8.8	19.8	13.1	0.66	0.84	22.7	23.5	14.3	1.16	10.3	98.7	3.61
1.0	0.00	12.77		4.8	6.2	14.3	20.0	13.2	0.66	0.82	22.8	24.6	14.5	1.17	10.6	99.2	3.64
				2.4	2.0	4.6	18.7	12.5	0.67	1.00	22.1	18.8	15.5	1.21	11.4	101.1	3.76
			50	3.6	3.7	8.5	19.2	12.7	0.66	0.94	22.4	20.5	16.0	1.23	11.9	102.2	3.83
				4.8	6.0	13.9	19.4	12.8	0.66	0.91	22.5	21.4	16.3	1.24	12.1	102.8	3.86
				2.4	1.9	4.4	18.0	12.1	0.67	1.11	21.8	16.2	17.2	1.27	12.8	104.5	3.96
			60	3.6	3.5	8.1	18.5	12.4	0.67	1.04	22.0	17.8	17.8	1.30	13.4	105.7	4.02
				4.8	5.8	13.4	18.7	12.5	0.67	1.01	22.1	18.6	18.1	1.31	13.6	106.4	4.06
				2.4	1.8	4.2	17.2	11.8	0.68	1.23	21.4	14.0	18.8	1.34	14.2	107.8	4.13
			70	3.6	3.3	7.6	17.7	12.0	0.68	1.16	21.6	15.3	19.4	1.36	14.8	109.0	4.19
				4.8	5.5	12.7	17.9	12.1	0.67	1.12	21.8	16.0	19.8	1.37	15.1	109.7	4.22
				2.4	1.7	3.9	16.3	11.4	0.70	1.36	20.9	12.0	20.3	1.40	15.6	110.8	4.27
			80	3.6	3.2	7.4	16.8	11.6	0.69	1.28	21.2	13.1	20.9	1.42	16.1	112.1	4.33
				4.8	5.2	12.0	17.1	11.7	0.69	1.24	21.3	13.8	21.3	1.43	16.4	112.7	4.35
				2.4	1.6	3.7	15.8	11.2	0.71	1.43	20.7	11.1	21.0	1.42	16.2	112.2	4.33
			85	3.6	3.1	7.2	16.4	11.4	0.70	1.35	21.0	12.2	21.6	1.44	16.7	113.4	4.39
				4.8	5.0	11.6	16.7	11.5	0.69	1.31	21.1	12.7	21.9	1.46	16.9	114.0	4.41
				2.4	1.6	3.7	15.3	11.0	0.72	1.50	20.4	10.2	21.7	1.45	16.7	113.5	4.39
			90	3.6	3.0	6.9	15.9	11.2	0.71	1.42	20.7	11.2	22.2	1.47	17.2	114.6	4.44
				4.8	4.9	11.3	16.2	11.3	0.70	1.38	20.9	11.7	22.5	1.48	17.4	115.2	4.46
				2.4	1.6	3.7	14.1	10.5	0.75	1.65	19.8	8.6					
			100	3.6	2.9	6.7	14.8	10.8	0.73	1.56	20.1	9.5					
				4.8	4.8	11.1	15.1	10.9	0.72	1.52	20.3	9.9	0 " 11-2			11	
				2.4	1.6	3.7	12.8	10.0	0.78	1.81	19.0	7.1	Operation Not Recommended			ied	
			110	3.6	2.9	6.7	13.6	10.3	0.76	1.72	19.4	7.9					
				4.8	4.8	11.1	13.9	10.5	0.75	1.68	19.6	8.3					
				1													

Interpolation is permissible; extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating. ARI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.

Table does not reflect fan or pump power corrections for ARI/ISO conditions.

All performance is based upon the lower voltage of dual voltage rated units.

Operation below 40°F EWT is based upon a 15% antifreeze solution.

Operation below 60°F EWT requires optional insulated water/refrigerant circuit (standard on residential models).

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation in shaded areas.

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Performance Data Correction Tables

Air Flow Correction Table

Airflow		Coc	ling		Heating				
% of Rated	Total Capacity	Sensible Capacity	Power	Heat of Rejection	Heating Capacity	Power	Heat of Extraction		
75%	0.951	0.860	0.963	0.952	0.990	1.054	0.966		
81%	0.964	0.894	0.973	0.965	0.993	1.035	0.977		
88%	0.979	0.936	0.984	0.979	0.996	1.019	0.987		
94%	0.990	0.969	0.992	0.990	0.998	1.008	0.994		
100%	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
106%	1.010	1.033	1.008	1.010	1.002	0.994	1.005		
113%	1.019	1.069	1.016	1.019	1.003	0.988	1.011		

Entering Air Correction Table

Heating								
Entering Air DB°F	Heating Capacity	Power	Heat of Extraction					
60	1.011	0.989	1.007					
65	1.004	0.994	1.004					
68	1.002	0.997	1.002					
70	1.000	1.000	1.000					
75	0.996	1.007	0.995					
80	0.991	1.018	0.990					

	Cooling										
Entering Air WB°F	Total		Sensible Cooling Capacity Multiplier - Entering DB °F						Power	Heat of	
AIL MR.E	Capacity	70	75	80	80.6	85	90	95	Rejection		
60	0.893	0.889	1.087	*	*	*	*	*	0.964	0.902	
65	0.964	0.692	0.884	1.085	1.108	*	*	*	0.988	0.967	
66.2	0.983	0.645	0.838	1.036	1.059	1.231	*	*	0.995	0.985	
67	1.000	0.613	0.806	1.000	1.027	1.199	*	*	1.000	1.000	
70	1.049		0.683	0.879	0.902	1.077	1.274	1.415	1.016	1.046	
75	1.118			0.676	0.698	0.866	1.068	1.266	1.037	1.106	

 $^{^\}star$ = Sensible capacity equals total capacity ARI/ISO/ASHRAE 13256-1 uses entering air conditions of Cooling - 80.6°F DB/66.2°F WB, 1 and Heating - 68°F DB/59°F WB entering air temperature

Antifreeze Correction Table

			Cooling			Heating		
Antifreeze Type	Anitfreeze %		EWT 90°F		EWT	Corr. Fct.		
	/6	Total Cap	Sens Cap	Power	Htg Cap	Power	EWT 30°F	
Water	0	1.000	1.000	1.000	1.000	1.000	1.000	
	5	0.995	0.995	1.003	0.989	0.997	1.070	
Propylene Glycol	15	0.986	0.986	1.009	0.968	0.990	1.210	
	25	0.978	0.978	1.014	0.947	0.983	1.360	
	5	0.997	0.997	1.002	0.989	0.997	1.070	
Methanol	15	0.990	0.990	1.007	0.968	0.990	1.160	
	25	0.982	0.982	1.012	0.949	0.984	1.220	
	5	0.998	0.998	1.002	0.981	0.994	1.140	
Ethanol	15	0.994	0.994	1.005	0.944	0.983	1.300	
	25	0.986	0.986	1.009	0.917	0.974	1.360	
	5	0.998	0.998	1.002	0.993	0.998	1.040	
Ethylene Glycol	15	0.994	0.994	1.004	0.980	0.994	1.120	
	25	0.988	0.988	1.008	0.966	0.990	1.200	

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Blower Performance & Electrical Data

Blower Performance

	Rated	SCFM		
Model	CFM	Low Speed	High Speed	
CCE07	240	190	240	
CCE09	300	240	300	
CCE12	350	300	350	
CCE15	400	340	400	
CCE19	460	400	460	

Fan speed is user selectable

All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units

All units ARI/ISO/ASHRAE 13256-1 rated on high fan speed

All units are designed and rated for zero external static pressure (non-ducted) application

Electrical Data

NA salad	Voltage		Min/Max		Compressor			Total	Min	Max
Model	Code	Voltage	Voltage	QTY	RLA	LRA	Motor FLA	Unit FLA	Circuit Amps	Fuse/ HACR
CCE07	А	115/60/1	104-126	1	7.1	46.5	0.50	7.6	9.3	15
CCE07	G	208-230/60/1	197-254	1	3.7	19.0	0.33	4.0	5.0	15
CCE07	E	265/60/1	239-292	1	2.8	16.0	0.35	3.1	3.8	15
CCE09	Α	115/60/1	104-126	1	9.0	46.5	1.30	10.3	12.5	20
CCE09	G	208-230/60/1	197-254	1	4.7	23.0	0.50	5.2	6.3	15
CCE09	E	265/60/1	239-292	1	3.8	16.0	0.50	4.3	5.3	15
CCE12	Α	115/60/1	104-126	1	10.6	63.0	1.30	11.9	14.6	25
CCE12	G	208-230/60/1	197-254	1	6.1	29.0	0.50	6.6	8.1	15
CCE12	E	265/60/1	239-292	1	4.8	21.6	0.50	5.3	6.5	15
CCE15	G	208-230/60/1	197-254	1	7.0	33.2	1.10	8.1	9.8	15
CCE15	E	265/60/1	239-292	1	5.4	29.0	1.00	6.4	7.8	15
CCE19	G	208-230/60/1	197-254	1	7.7	38.0	1.10	8.8	10.7	15
CCE19	E	265/60/1	239-292	1	5.8	29.0	1.00	6.8	8.2	15



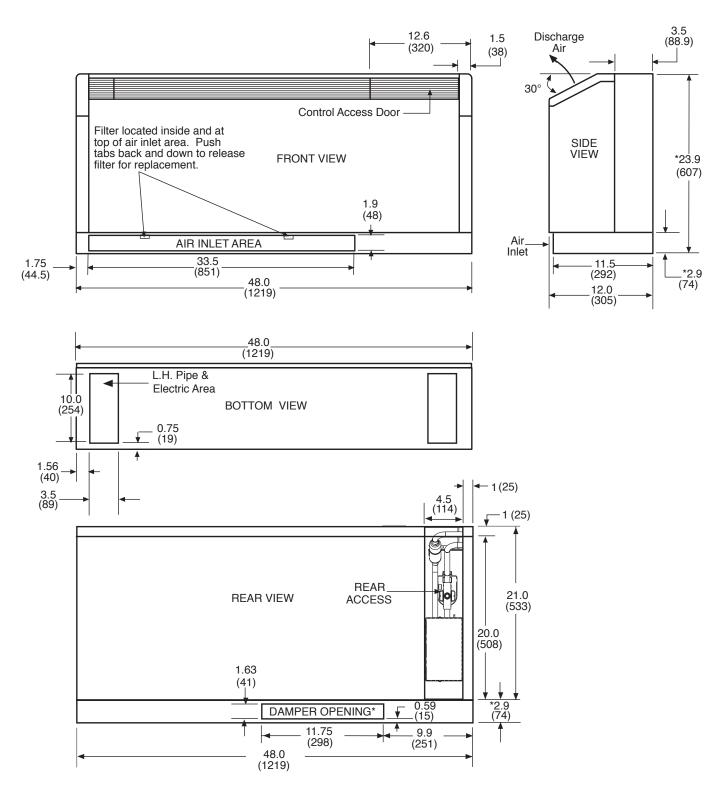
Physical Data

Model	07	09	12	15	19	
Compressor (1 Each)	Rotary					
Factory Charge R22 (oz) [kg]	16 [0.454]	16 [0.454]	3 [0.454] 21 [0.595]		24 [0.680]	
PSC Fan Motor & Blower (3 Speeds)						
Fan Motor (hp) [W]	1/20 [27]	1/15 [50]	1/15 [50]	1/6 [124]	1/6 [124]	
Blower Wheel Size (dia x w) - (in) [mm]	5-1/4 x 6-1/4 [133 x 159]	5-1/4 x 6-1/4 [133 x 159]	5-1/4 x 6-1/4 [133 x 159]	5-1/4 x 6-1/4 [133 x 159]	5-1/4 x 6-1/4 [133 x 159]	
Water Connection Size						
O.D. Sweat (in) [mm]	5/8 [15.9]	5/8 [15.9]	5/8 [15.9]	5/8 [15.9]	5/8 [15.9]	
Optional IPT Fittings (in)	1/2	1/2	1/2	1/2	1/2	
Optional EPT Fittings (in)	1/2	1/2	1/2	1/2	1/2	
Condensate Connection Size	•					
I.D. Vinyl Hose (In) [mm]	5/8 [15.9]	5/8 [15.9]	5/8 [15.9]	5/8 [15.9]	5/8 [15.9]	
Air Coil Size						
Dimensions (h x w) - (in) [mm]	8	x 26 [20.3 x 66.	0]	10 x 26 [2	5.4 x 66.0]	
Filter Size						
Bottom Return (in) [cm]		1 - 8 x 29-1	/2 x 3/8 [20.3 x	74.9 x 0.95]		
Front Return (In) [cm]		1 - 7 x 29-1	/2 x 1/8 [17.8 x	74.9 x 0.32]		
Cabinet Size						
Bottom Return (Std. 3" Base) (W x H x D) - (In) [cm]	48 x 24 x 12 [121.9 x 61.0 x 30.5]					
Bottom Return (Std. 5" Base) (W x H x D) - (In) [cm]	48 x 26 x 12 [121.9 x 66.0 x 30.5]					
Bottom Return (No Subbase) (W x H x D) - (In) [cm]	48 x 21 x 12 [121.9 x 53.3 x 30.5]					
Unit Weight						
Weight - Operating, (lbs) [kg]	173 [78.5]	177 [80.3]	187 [84.5]	193 [87.5]	198 [89.8]	
Weight - Packaged, (lbs) [kg]	181 [82.1]	185 [83.9]	195 [88.5]	201 [91.2]	206 [93.4]	



Console Cabinet Dimensions Bottom Return - Left Hand Piping

Left Hand Bottom Return



Notes

All Dimensions are in inches (mm)

Optional autoflow valve, motorized water valve and disconnect box are shown.

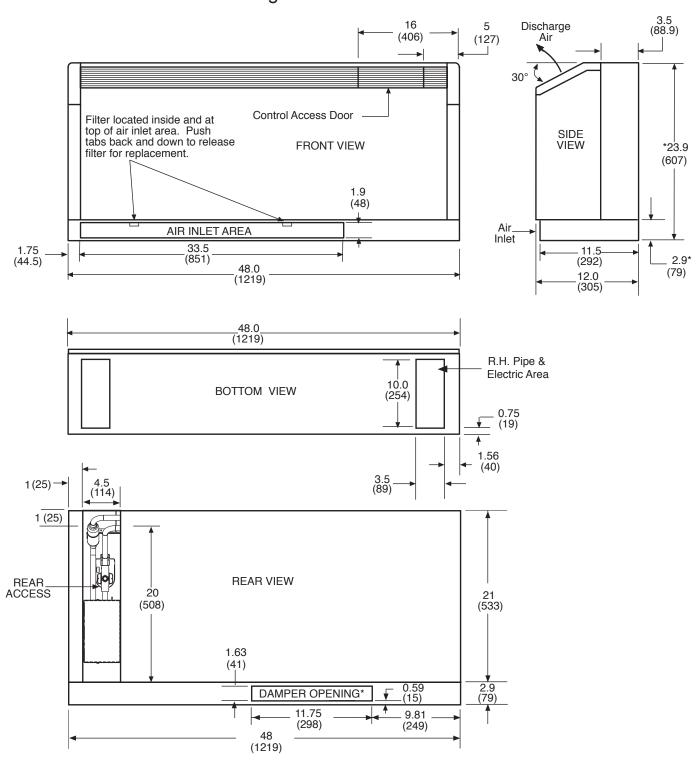
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^{*} Dimension with 3" (76.2 mm) subbase. Add 2" (50.8 mm) to dimension shown for 5"(127 mm) subbase.



Console Cabinet Dimensions Bottom Return - Right Hand Piping

Right Hand Bottom Return



Notes:

All Dimensions are in inches (mm)

* Dimension with 3" (76.2mm) subbase. Add 2" (50.8mm) to dimensions shown for 5" (127mm) subbase. Optional autoflow valve, motorized water valve and disconnect box are shown.

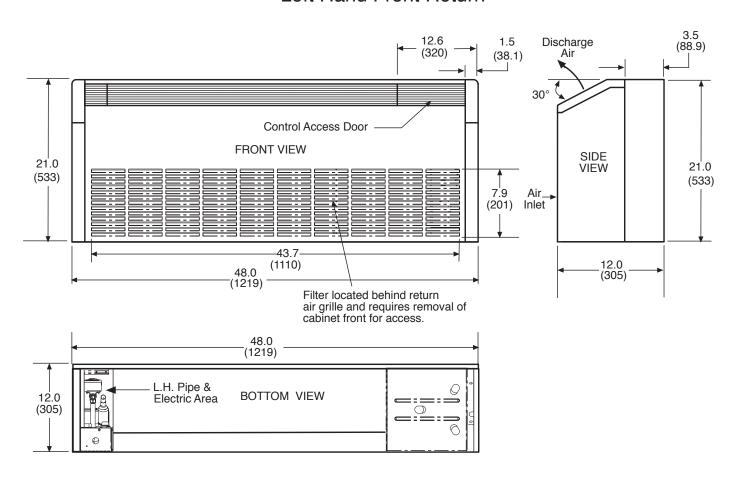
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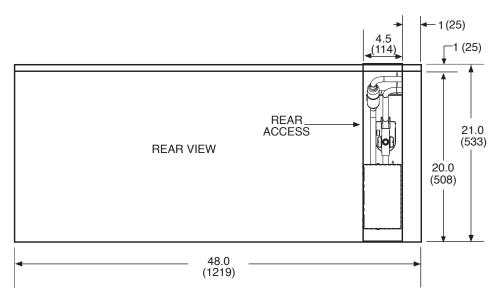
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Console Cabinet Dimensions Front Return - Left Hand Piping

Left Hand Front Return





Notes:

All Dimensions are in inches (mm)

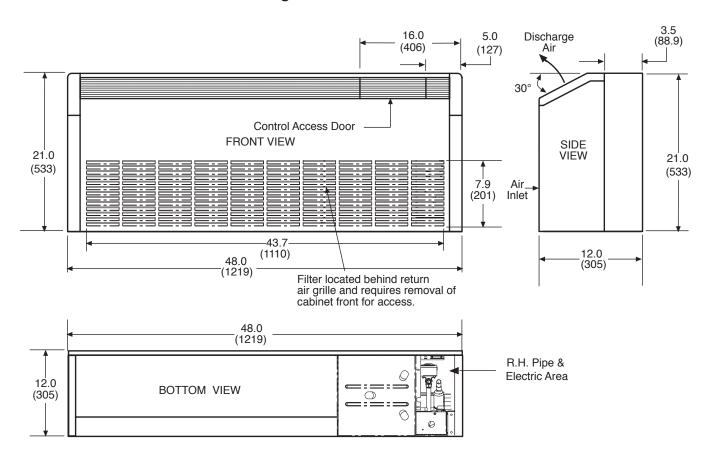
Optional autoflow valve, motorized water valve and disconnect box are shown.

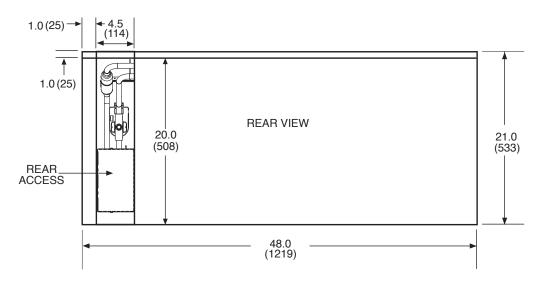
Rev.: 07/14/06D



Console Cabinet Dimensions Front Return - Right Hand Piping

Right Hand Front Return





Notes

All Dimensions are in inches (mm).

Optional autoflow valve, motorized water valve and disconnect box are shown.

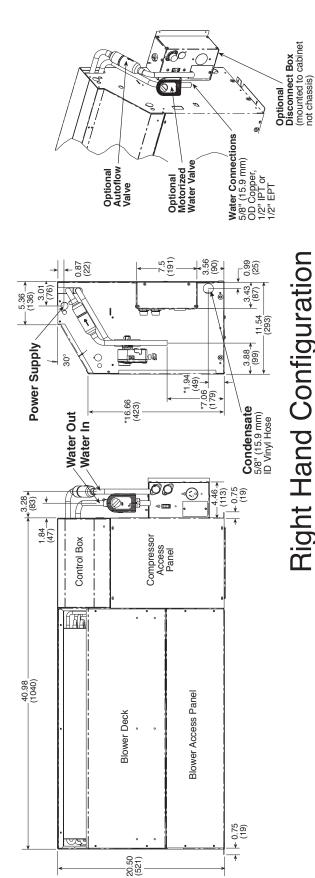
Rev.: 07/14/06D

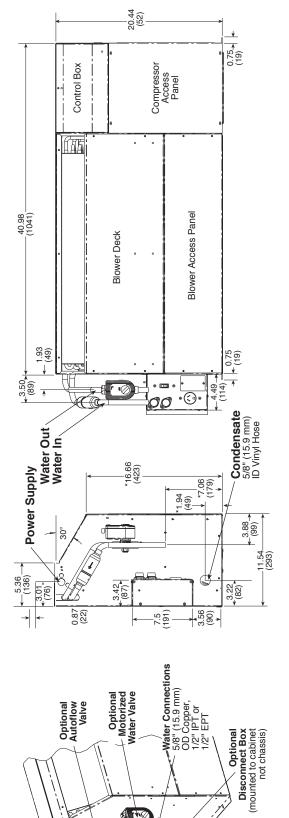
Right Hand Configuration

Console Chassis Dimensions

Rev.: 08/12/03 B







-eft Hand Configuration

Notes:

* Holl Dimensions are in inches (mm)

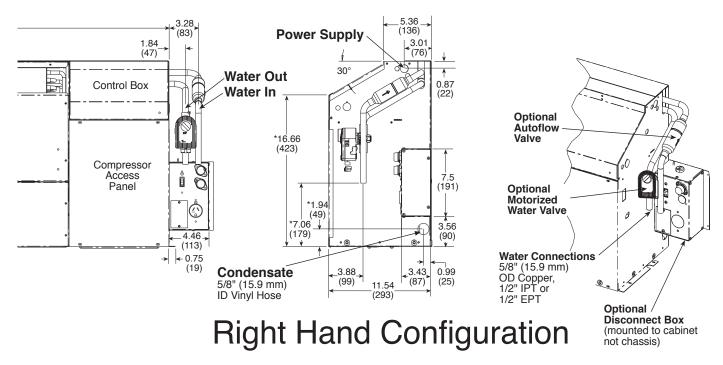
* For Installed dimension, add to dimension shown 2.9" [74mm] with 3" subbase and 4.9" [124mm] for 5" subbase. Optional autoflow valve, motorized water valve and disconnect box are shown.

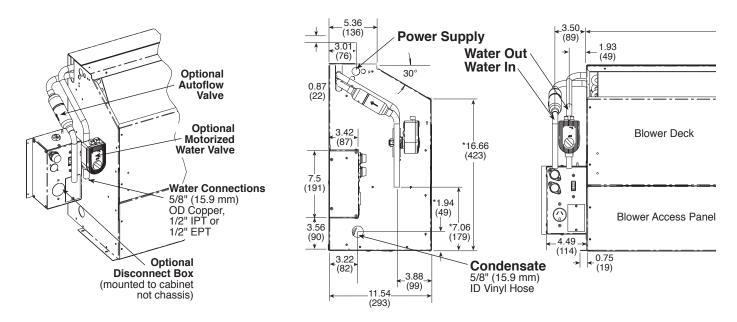
Water connection in same location regardless of connection type.

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Left Hand Configuration

Notes:

All Dimensions are in inches (mm)

All Differsions are in incres (initi)
* For installed dimension, add to dimension shown 2.9" [74mm] with 3" subbase and 4.9" [124mm] for 5" subbase.
Optional autoflow valve, motorized water valve and disconnect box are shown.
Water connection in same location regardless of connection type.



CCE Series Wiring Diagram Matrix

Only CXM and DXM diagrams, with a representative diagram of LON and MPC Options are presented in this submittal. Other diagrams can be located online at www.climatemaster.com using the part numbers presented below.

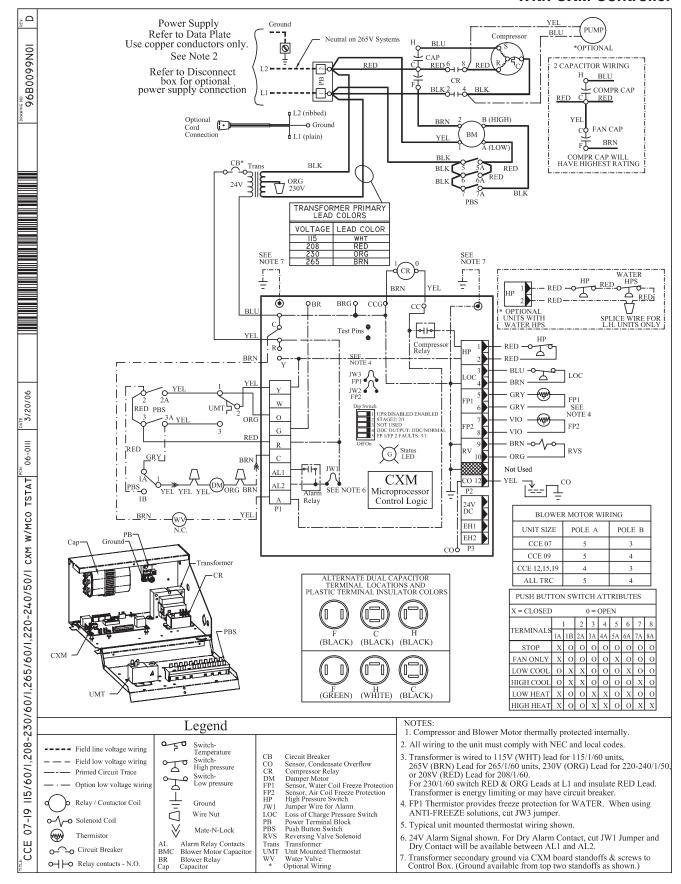
Model	Refrigerant	Wiring Diagram Part Number	Electrical Control		Agency	
	R22 96B0099N01	96B0099N01			MCO	-
	R22	96B0099N02	115/60/1,		ACO	-
	R22	96B0099N03	208-230/60/1,		REM	-
	R22	96B0099N04	265/60/1		LON	-
	R22	96B0099N05		CXM	MPC	-
	R407C	96B0099N07		CXIVI	MCO	CE
	R407C	96B0099N08	220-240/50/1		ACO	CE
	R407C	96B0099N09			REM	CE
	R407C	96B0099N10			LON	CE
CCE07 -	R407C	96B0099N11			MPC	CE
CCE19	R22	96B0100N01			MCO	-
	R22	96B0100N02	115/60/1,		ACO	-
	R22	96B0100N03	208-230/60/1,		REM	-
	R22	96B0100N04	265/60/1		LON	-
	R22	96B0100N05		DXM	MPC	-
	R407C	96B0100N07		DXIVI	MCO	CE
	R407C	96B0100N08			ACO	CE
	R407C	96B0100N09	220-240/50/1		REM	CE
	R407C	96B0100N10			LON	CE
	R407C	96B0100N11			MPC	CE

All wiring diagrams available at www.climatemaster.com. R407C submittals will only contain CE Mark wiring diagrams

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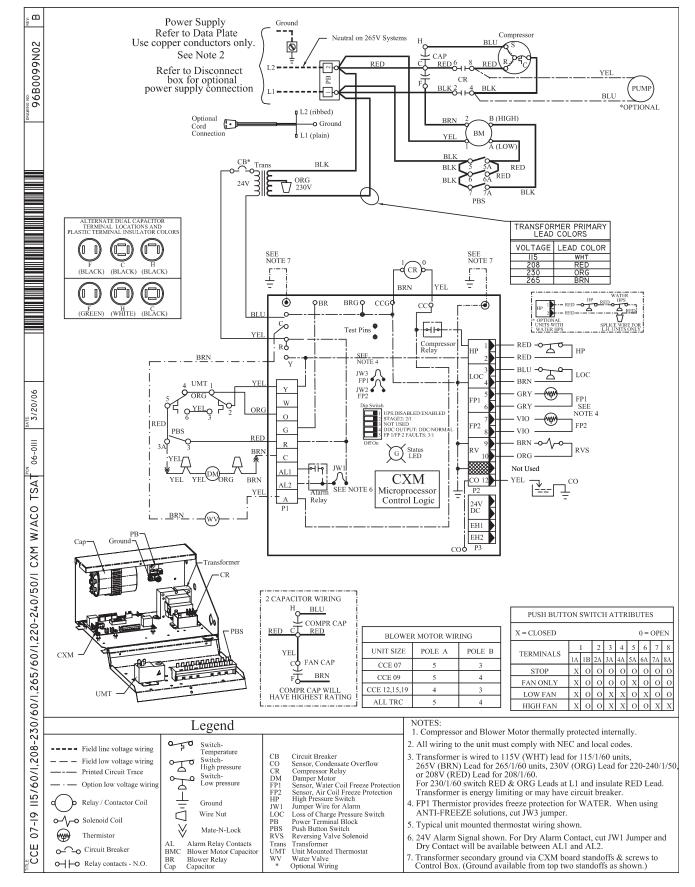
Typical Wiring Diagram Manual Change Over CCE Units (Rev. A) With CXM Controller



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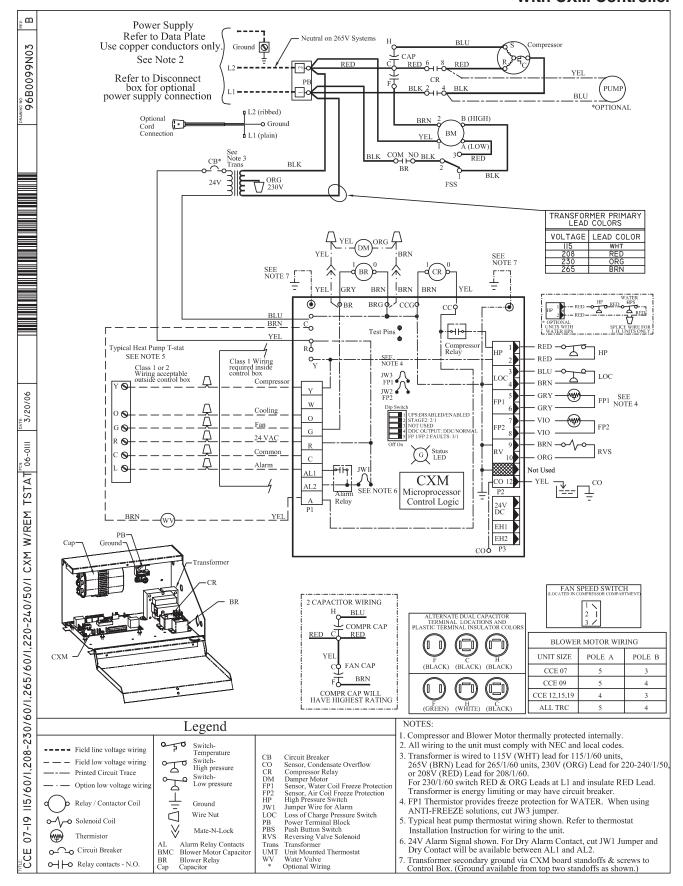
Typical Wiring Diagram Auto Change Over CCE Units (Rev. A) With CXM Controller



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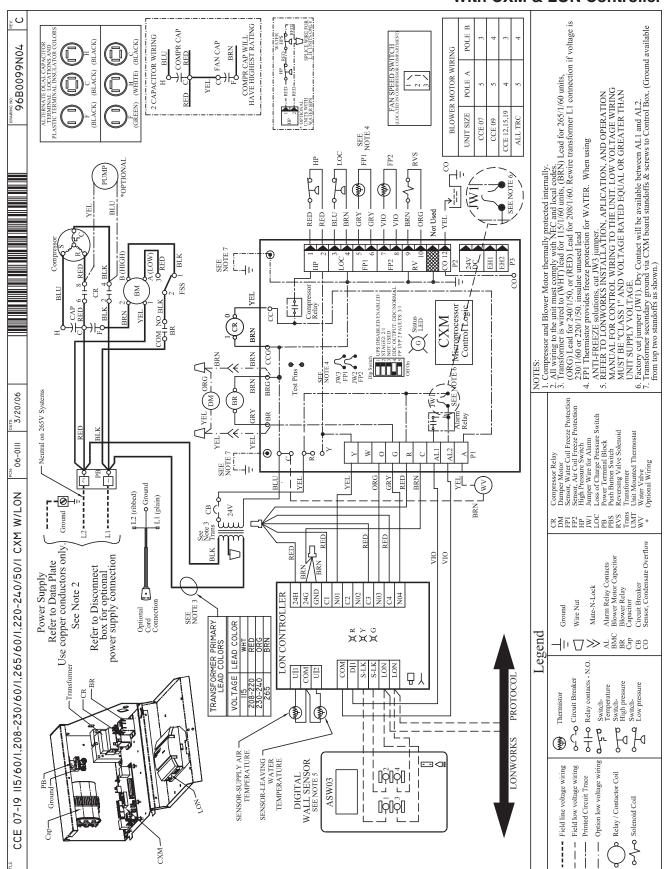
Typical Wiring Diagram Remote Mounted Thermostat CCE Units (Rev. A) With CXM Controller



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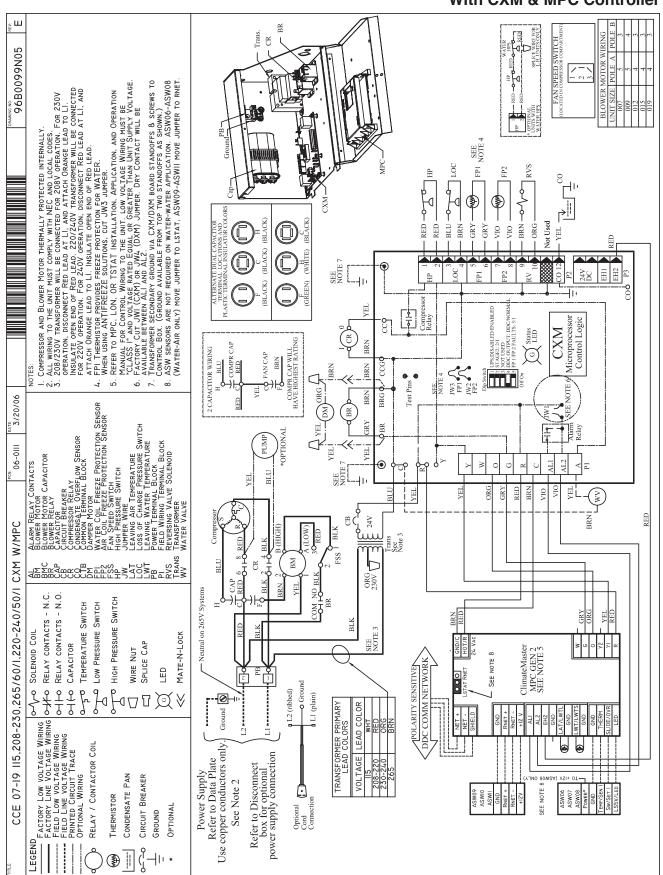
Typical Wiring Diagram CCE Units (Rev. A) With CXM & LON Controller



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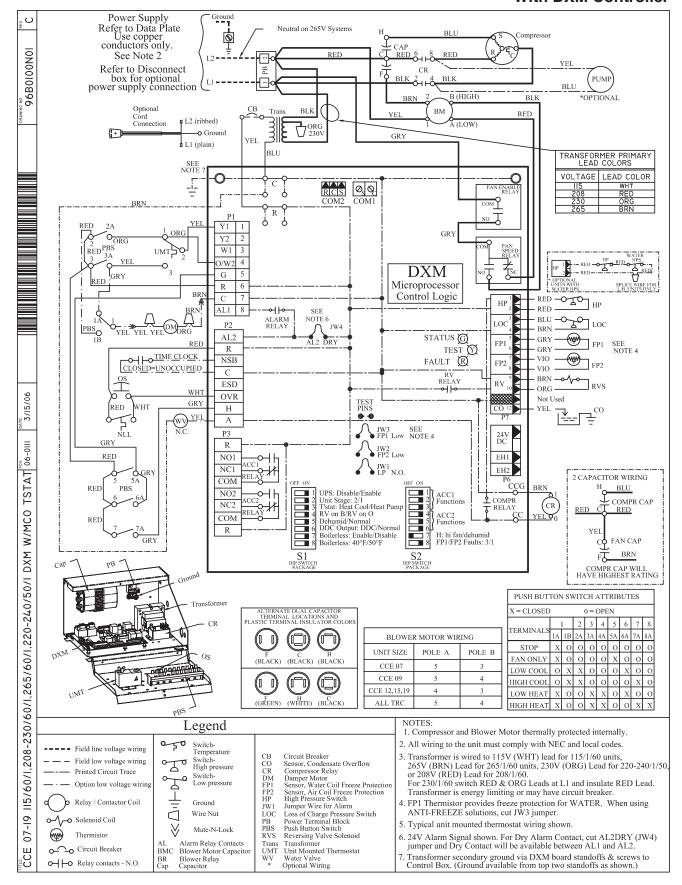
Typical Wiring Diagram CCE Units (Rev. A) With CXM & MPC Controller



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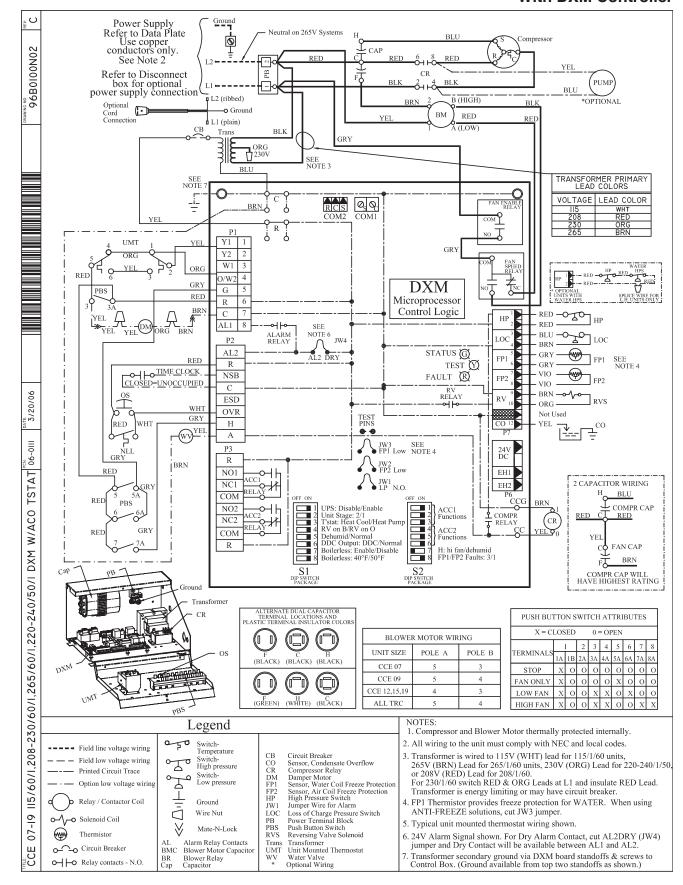
Typical Wiring Diagram Manual Change Over CCE Units (Rev. A) With DXM Controller



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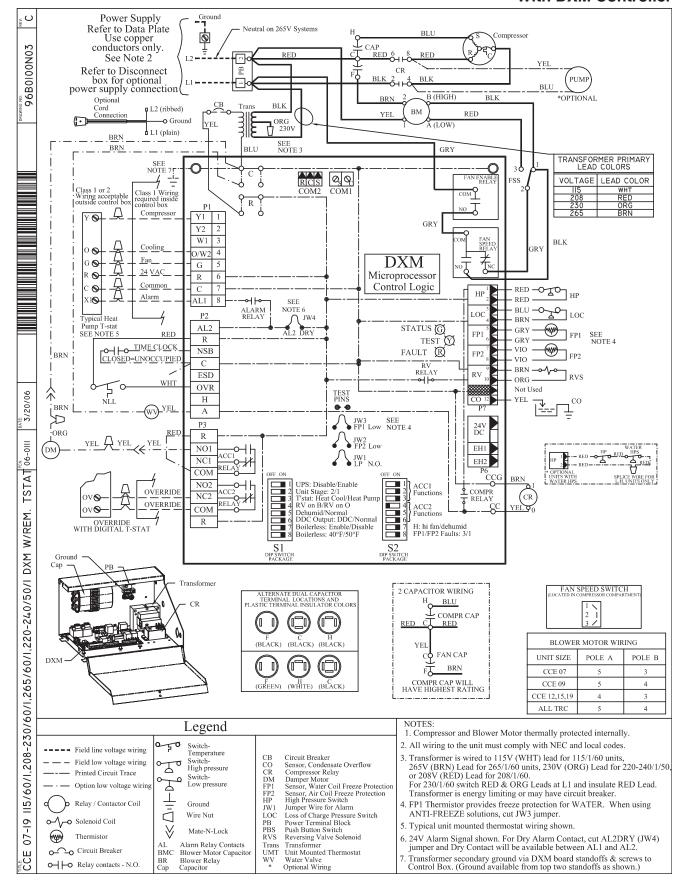
Typical Wiring Diagram Auto Change Over CCE Units (Rev. A) With DXM Controller



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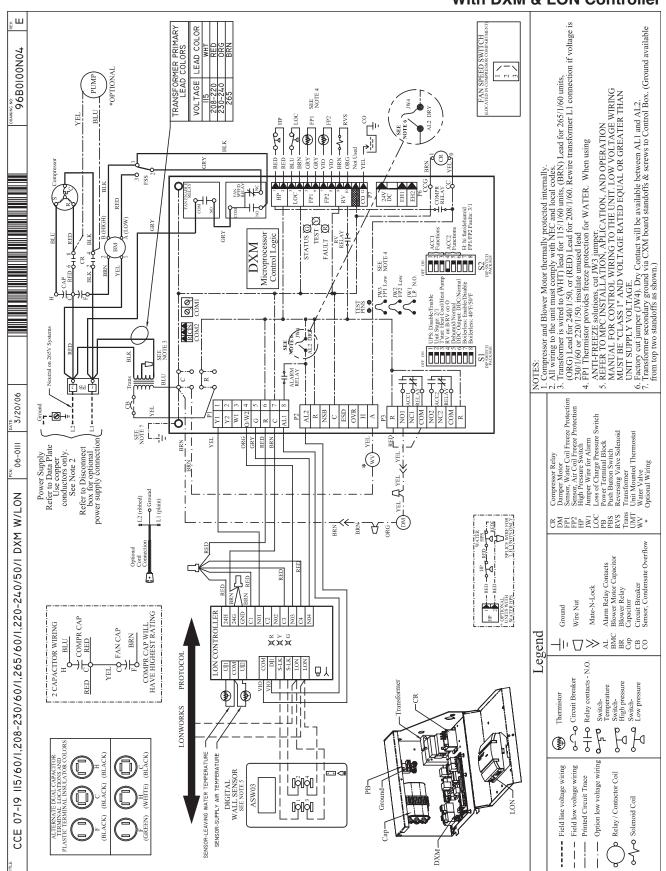
Typical Wiring Diagram Remote Mounted Thermostat CCE Units (Rev. A) With DXM Controller



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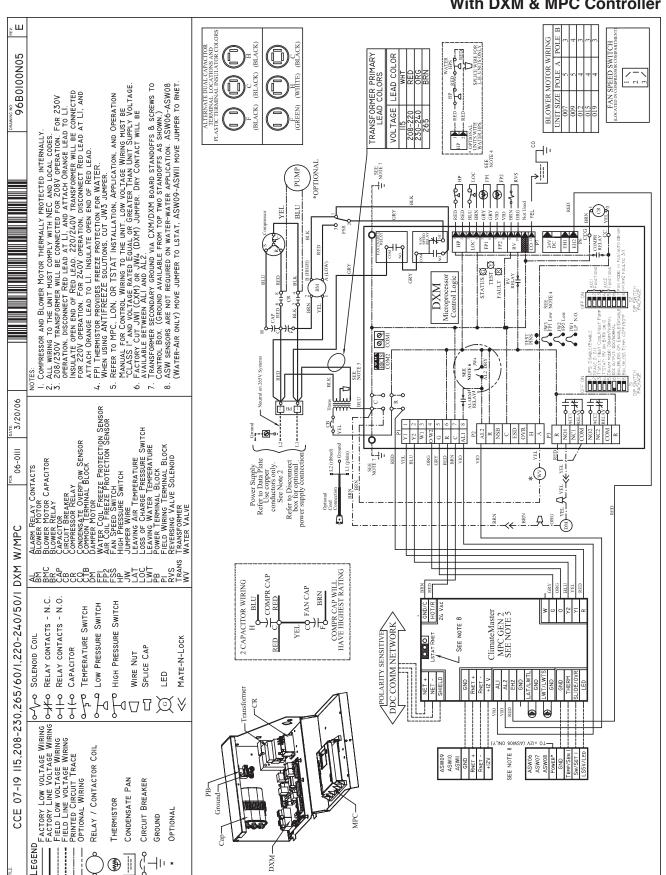
Typical Wiring Diagram CCE Units (Rev. A) With DXM & LON Controller



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Typical Wiring Diagram CCE Units (Rev. A) With DXM & MPC Controller



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Console (CCE) Series 60Hz (Rev. A)
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General:

Furnish and install ClimateMaster "Console" Water Source Heat Pumps, as indicated on the plans. Equipment shall be completely assembled, piped and internally wired. Capacities and characteristics as listed in the schedule and the specifications that follow.

Console Water Source Heat Pumps:

Units shall be supplied completely factory built for an entering water temperature range from 20° to 110°F (-6.7° to 43.3°C) as standard. Equivalent units from other manufacturers can be proposed provided approval to bid is given 10 days prior to bid closing. All equipment listed in this section must be rated and certified in accordance with American Refrigeration Institute / International Standards Organization (ARI / ISO) and Canadian Standards Association (CSA-US). The units shall have ARI / ISO 13256-1 and CSA-US labels.

Basic Construction:

Console Units shall have one of the following air flow and piping arrangements: Front Inlet/Right-hand Piping; Front Inlet/Left-hand piping; Bottom Inlet/Right-hand piping; or Bottom Inlet/Left-hand piping as shown on the plans. If units with these arrangements are NOT used, the contractor is responsible for any extra costs incurred by other trades. If other arrangements make servicing difficult, the contractor must provide access panels and clear routes to ease service. Architect/Engineer must approve any changes in layout.

The cabinet, wall sleeve and subbase shall be constructed of heavy gauge galvanized steel with a baked polyester powder coat paint finish. Corrosion protection system shall meet the stringent 1000 hour salt spray test per ASTM B117. Unit corrosion protection must meet these stringent requirements or unit(s) will not be accepted. Color will be Polar Ice. Both sides of the steel shall be painted for added protection. Additionally, the wall sleeve shall have welded corner bracing. The easily removable cabinet enclosure allows for easy service to the chassis, piping compartment and control compartment.

All interior surfaces shall be lined with 1/4 inch (6.4mm) thick, dual density, 2 lb/ft3 (32 kg/m3) acoustic flexible blanket type glass fiber insulation with a non-woven, anti-microbial treated mat face. Insulation placement shall be designed in a manner that will eliminate any exposed edges to prevent the introduction of glass fibers into the air stream.

Standard insulation must meet NFPA Fire Hazard Classification requirements 25/50 per ASTM E84, UL 723, CAN/ULC S102-M88 and NFPA 90A requirements; air erosion and mold growth limits of UL-181; stringent fungal resistance test per ASTM-C1071 and ASTM G21; and shall meet zero level bacteria growth per ASTM G22. *Unit insulation must meet these stringent requirements or unit(s) will not be accepted.*

The cabinet shall have a 30° sloped top with aluminum rigid bar type discharge grille. Aluminum discharge grille shall be anodized charcoal grey in color including hinged control door. Cabinet shall have rounded edges (0.325 inch / 8.255 mm minimum radius) on all exposed corners for safety and esthetic purposes. Units not having sloped top and rounded corners (0.325 inch / 8.255 mm minimum) on front, side, top slope, and top corners shall not be accepted.

Return Air Filter shall be 3/8" (9.5mm) permanent cleanable media type or 1/8" (3.2mm) for front return type units.

Option: The unit shall be provided with a keyed lock on the control access door.

Option: The unit shall be provided with a motorized outside air damper and damper assembly, factory mounted and wired.

Option: The unit shall be provided with a 5 inch (127mm) high subbase (3 inch / 76.2mm subbase is standard).

Option: The unit shall be provided without a subbase (3 inch / 76.2mm high subbase is standard).

Option: The unit shall include a front return air grille integrally stamped into Cabinet (no subbase allowed).

Option: The unit shall be supplied with extended range Insulation option, which adds closed cell insulation to internal water lines, and provides insulation on suction side refrigeration tubing including refrigerant to water heat exchanger.

Fan and Motor Assembly:

Fan and motor assembly shall be assembled on a slide out fan deck with quick electrical disconnecting means to provide and facilitate easy field servicing. The fan motor shall be multi-speed, permanently lubricated, PSC type, with internal thermal overload protection. Units supplied without permanently lubricated motors must provide external oilers for easy service. The fan motor shall include a torsionally flexible motor mounting system or saddle mount system with resilient rings to inhibit vibration induced high noise levels associated with "hard wire belly band" motor mounting. The airflow rating of the unit shall be based on a wet coil and a clean filter in place. Ratings based on a dry coil and / or no filter shall NOT be acceptable.

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Refrigerant Circuit:

Units shall have a sealed refrigerant circuit including a high efficiency rotary compressor designed for heat pump operation, a thermostatic expansion valve for refrigerant metering, an enhanced corrugated aluminum lanced fin and rifled copper tube refrigerant to air heat exchanger, reversing valve, coaxial (tube in tube) refrigerant to water heat exchanger, and safety controls including a high pressure switch, low pressure switch (loss of charge), water coil low temperature sensor, and air coil low temperature sensor. Access fittings shall be factory installed on high and low pressure refrigerant lines to facilitate field service. Activation of any safety device shall prevent compressor operation via a microprocessor lockout circuit. The lockout circuit shall be reset at the thermostat or at the contractor supplied disconnect switch. *Units that cannot be reset at the thermostat shall not be acceptable.*

Hermetic compressors shall be internally sprung. The compressor shall have a dual level vibration isolation system. The compressor will be mounted on computer selected vibration isolation grommets to a large heavy gauge compressor mounting tray plate, which is then isolated from the cabinet base with rubber grommets for maximized vibration attenuation. Compressor shall have thermal overload protection. Compressor shall be located in an insulated compartment away from air stream to minimize sound transmission. Refrigerant to air heat exchangers shall utilize enhanced corrugated lanced aluminum fins and rifled copper tube construction rated to withstand 450 PSIG (3101 kPa) refrigerant working pressure. Refrigerant to water heat exchangers shall be of copper inner water tube and steel refrigerant outer tube design, rated to withstand 450 PSIG (3101 kPa) working refrigerant pressure and 450 PSIG (3101 kPa) working water pressure.

Refrigerant metering shall be accomplished by thermostatic expansion valve only. Expansion valves shall be dual port balanced types with external equalizer for optimum refrigerant metering. Units shall be designed and tested for operating ranges of entering water temperatures from 20° to 110°F (-6.7° to 43.3°C). Reversing valve shall be four-way solenoid activated refrigerant valve, which shall default to heating mode should the solenoid fail to function. If the reversing valve solenoid defaults to cooling mode, an additional low temperature thermostat must be provided to prevent over-cooling an already cold room.

Option: The unit will be supplied with cupro nickel coaxial water to refrigerant heat exchanger.

Option: The unit will be supplied with internally factory mounted two-way water valve for variable speed pumping requirements.

A factory-mounted or field-installed high pressure switch shall be installed in the water piping to disable compressor operation in the event water pressures build due to water freezing in the piping system.

Option: The unit will be supplied with internally factory mounted automatic water flow regulators.

Option: The unit will be supplied with internally mounted secondary pump for primary/secondary applications, specifically one-pipe systems.

Option: The unit shall be supplied with extended range Insulation option, which adds closed cell insulation to internal water lines, and provides insulation on suction side refrigeration tubing including refrigerant to water heat exchanger.

Option: The refrigerant to air heat exchanger shall be "electro-coated" with a low cure cathodic epoxy material a minimum of 0.4 mils thick (0.4 – 1.5 mils range) on all surfaces. The black colored coating shall provide a minimum of 1,000 hours salt spray protection per ASTM B117-97 on all galvanized end plates and copper tubing, and a minimum of 2,000 hours of salt spray on all aluminum fins. The material shall be formulated without the inclusion of any heavy metals and shall exhibit a pencil hardness of 2H (ASTM D3363-92A), crosshatch adhesion of 4B-5B (ASTM D3359-95), and impact resistance of 160 in/lbs direct (ASTM D2794-93).

Piping

Water piping shall terminate in the same location regardless of the connection and valve options.

Option: Threaded EPT copper fittings (sweat connections are standard).

Option: Threaded IPT copper fittings (sweat connections are standard).

Drain Pan:

The drain pan shall be constructed of galvanized steel and have a powder coat paint application to further inhibit corrosion. This corrosion protection system shall meet the stringent 1000 hour salt spray test per ASTM B117. If plastic type material is used, it must be HDPE (High Density Polyethylene) to avoid thermal cycling shock stress failure over the lifetime of the unit. Stainless Steel materials are also acceptable. Drain pan shall be fully insulated. Drain outlet shall be located at pan as to allow complete and unobstructed drainage of condensate. The unit as standard will be supplied with solid-state electronic condensate overflow protection. *Mechanical float switches will NOT be accepted.*

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Electrical:

Unit controls shall be located under the hinged control door in the sloped top grille. Operating controls shall consist of push buttons to select stop, hi cool, lo cool, hi heat, lo heat, fan only operation, and rotary cooler/warmer temperature range knob which shall be ADA approved for layout.

A control box shall be located above the unit compressor compartment and shall contain a push button selector switch, rotary thermostat, 24VAC transformer, double-pole compressor relay, and solid-state controller for complete unit operation. Reversing valve and fan motor wiring shall be routed through this electronic controller. Units shall be name-plated for use with time delay fuses or HACR circuit breakers. A unit-mounted thermostat with a remote bulb measuring return air temperature shall control the compressor operation for heating and cooling.

Option: ACO unit mounted thermostat (MCO is standard).

Option: Provisions for remote thermostat (unit mounted is standard).

Option: Disconnect Switch, Non-Fused.

Option: Disconnect Switch, Fused with 15A fuse.

Option: 20A power plug/cord.

Option: 20A plug, cord, receptacle, disconnect switch, fused with 15A fuse.

Option: 20A plug, cord, receptacle, disconnect switch, non fused.

Solid State Control System (CXM):

Units shall have a solid-state control system. *Units utilizing electro-mechanical control shall not be acceptable.* The control system microprocessor board shall be specifically designed to protect against building electrical system noise contamination, EMI, and RFI interference. The control system shall interface with a heat pump type thermostat. The control system shall have the following features:

- a. Anti-short cycle time delay on compressor operation.
- b. Random start on power up mode.
- c. Low voltage protection.
- d. High voltage protection.
- e. Unit shutdown on high or low refrigerant pressures.
- f. Unit shutdown on low water temperature.
- g. Condensate overflow electronic protection.
- h. Option to reset unit at thermostat or disconnect.
- i. Automatic intelligent reset. Unit shall automatically reset the unit 5 minutes after trip if the fault has cleared. If a fault occurs 3 times sequentially without thermostat meeting temperature, then lockout requiring manual reset will occur.
- Ability to defeat time delays for servicing.
- k. Light emitting diode (LED) on circuit board to indicate high pressure, low pressure, low voltage, high voltage, low water/air temperature cut-out, condensate overflow, and control voltage status.
- I. The low-pressure switch shall not be monitored for the first 120 seconds after a compressor start command to prevent nuisance safety trips.
- m. 24V output to cycle a motorized water valve or other device with compressor contactor.
- n. Unit Performance Sentinel (UPS). The UPS warns when the heat pump is running inefficiently.
- o. Water coil low temperature sensing (selectable for water or anti-freeze).
- p. Air coil low temperature sensing.

NOTE: Units not providing the 8 safety protections of anti-short cycle, low voltage, high voltage, high refrigerant pressure, low pressure (loss of charge), air coil low temperature cut-out, water coil low temperature cut-out, and condensate overflow protections will not be accepted.

Option: Enhanced solid state control system (DXM)

This control system features two stage control of cooling and two stage control of heating modes for exacting temperature and dehumidification purposes.

This control system coupled with a multi-stage thermostat will better dehumidify room air by automatically running the heat pump's fan at lower speed on the first stage of cooling thereby implementing low sensible heat ratio cooling. On the need for



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higher cooling performance the system will activate the second stage of cooling and automatically switch the fan to the higher fan speed setting. This system may be further enhanced with a humidistat. **Units not having automatic low sensible heat ratio cooling will not be accepted;** as an alternate a hot gas reheat coil may be provided with control system for automatic activation.

Control shall have all of the above mentioned features of the CXM control system along with the following expanded features:

- a. Removable thermostat connector.
- b. Night setback control.
- c. Random start on return from night setback.
- d. Minimized reversing valve operation (Unit control logic shall only switch the reversing valve when cooling is demanded for the first time. The reversing valve shall be held in this position until the first call for heating, ensuring quiet operation and increased valve life.).
- e. Override temperature control with 2-hour (adjustable) timer for room occupant to override setback temperature at the thermostat.
- f. Dry contact night setback output for digital night setback thermostats.
- g. Ability to work with heat pump or heat/cool (Y, W) type thermostats.
- h. Ability to work with heat pump thermostats using O or B reversing valve control.
- i. Emergency shutdown contacts.
- j. Boilerless system heat control at low loop water temperature.
- k. Ability to allow up to 3 units to be controlled by one thermostat.
- I. Relay to operate an external damper.
- m. Ability to automatically change fan speed from multistage thermostat.
- n. Relay to start system pump.
- o. 75 VA control transformer. Control transformer shall have load side short circuit and overload protection via a built in circuit breaker.

Remote Service Sentinel (CXM/DXM):

Solid state control system shall communicate with thermostat to display (at the thermostat) the unit status, fault status, and specific fault condition, as well as retrieve previously stored fault that caused unit shutdown. The Remote Service Sentinel allows building maintenance personnel or service personnel to diagnose unit from the wall thermostat. The control board shall provide a signal to the thermostat fault light, indicating a lockout. Upon cycling the G (fan) input 3 times within a 60 second time period, the fault light shall display the specific code as indicated by a sequence of flashes. A detailed flashing code shall be provided at the thermostat LED to display unit status and specific fault status such as over/under voltage fault, high pressure fault, low pressure fault, low water temperature fault, condensate overflow fault, etc. *Units that do not provide this remote service sentinel shall not be acceptable*.

Option: Lonworks interface system

Units shall have all the features listed above (either CXM or DXM) and the control board will be supplied with a LONWORKS interface board, which is LONMark certified. This will permit all units to be daisy chained via a 2-wire twisted pair shielded cable. The following points must be available at a central or remote computer location:

- a. Space temperature
- b. Leaving water temperature
- c. Discharge air temperature
- d. Command of space temperature setpoint
- e. Cooling status
- f. Heating status
- g. Low temperature sensor alarm
- Low pressure sensor alarm
- i. High pressure switch alarm
- Condensate sensor alarm
- k. Hi/low voltage alarm
- I. Fan "ON/AUTO" position of space thermostat as specified above
- m. Unoccupied / occupied command
- n. Cooling command
- o. Heating command
- p. Fan "ON / AUTO" command
- q. Fault reset command
- r. Itemized fault code revealing reason for specific shutdown fault (any one of 7)

This option also provides the upgraded 75VA control transformer with load side short circuit and overload protection via a built in circuit breaker.

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Option: MPC (Multiple Protocol Control) interface system

Units shall have all the features listed above (either CXM or DXM) and the control board will be supplied with a Multiple Protocol interface board. Available protocols are BACnet MS/TP, Modbus, or Johnson Controls N2. The choice of protocol shall be field selectable/changeable via the use of a simple selector switch. Protocol selection shall not require any additional programming or special external hardware or software tools. This will permit all units to be daisy chain connected by a 2-wire twisted pair shielded cable. The following points must be available at a central or remote computer location:

- a. Space temperature
- b. Leaving water temperature
- c. Discharge air temperature
- d. Command of space temperature setpoint
- e. Cooling status
- f. Heating status
- g. Low temperature sensor alarm
- h. Low pressure sensor alarm
- i. High pressure switch alarm
- i. Condensate overflow alarm
- k. Hi/low voltage alarm
- I. Fan "ON/AUTO" position of space thermostat as specified above
- m. Unoccupied / occupied command
- n. Cooling command
- o. Heating command
- p. Fan "ON / AUTO" command
- g. Fault reset command
- r. Itemized fault code revealing reason for specific shutdown fault (any one of 7)

This option also provides the upgraded 75VA control transformer with load side short circuit and overload protection via a built in circuit breaker.

Warranty:

Climate Master shall warranty equipment for a period of 12 months from start up or 18 months from shipping (which ever occurs first).

Option: Extended 4-year compressor warranty covers compressor for a total of 5 years.

Option: Extended 4-year refrigeration circuit warranty covers coils, reversing valve, expansion valve and compressor for a total of 5 years.

Option: Extended 4-year control board warranty covers the CXM/DXM control board for a total of 5 years.

FIELD INSTALLED OPTIONS

Hose Kits:

Hoses shall be 1 foot (31cm) long, braided stainless steel; fire rated hoses complete with adapters. Only fire rated hoses will be accepted. Note: Threaded connection piping option must be ordered for hose kit connections.

Option: 2 foot (61cm) hose lengths instead of standard 1 foot (31cm) length.

Valves:

The following valves are available and will be shipped loose:

- a. Ball valve; bronze material, standard port full flow design, IPT connections.
- Ball valve with memory stop and PT Port; standard port full flow design, IPT connections.
- c. "Y" strainer with cap; bronze material, IPT connections.
- d. "Y" strainer with blowdown valve; bronze material, IPT connections.
- e. Motorized water valve; slow acting, 24v, IPT connections.

Hose Kit Assemblies:

The following assemblies ship with the valves already assembled to the hose described:

- Supply and return hoses having ball valve with PT port.
- b. Supply hose having ball valve with PT port; return hose having automatic flow regulator valve (Measureflo) with PT ports, and ball valve.
- c. Supply hose having "Y" strainer with blowdown valve, and ball valve with PT port; return hose having automatic flow regulator (Measureflo) with PT ports, and ball valve.

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Thermostats:

The thermostat shall be a ClimateMaster mechanical or electronic type thermostat as selected below with the described features (Note: "Remote mounted thermostat" control option must be selected for the console unit):

- a. Single Stage Standard Manual Changeover (ATM11C01) Thermostat shall be a single-stage, vertical mount, manual changeover with HEAT-OFF-COOL system switch and fan ON-AUTO switch. Thermostat shall have a mechanical temperature indicator and set point indication. Thermostat shall only require 4 wires for connection. *Mercury bulb thermostats are not acceptable.*
- b. Single Stage Digital Manual Changeover with Two-Speed Fan Control (ATM11C03) Recommended for Console Remote-Mount Thermostat (DXM required)

 Thermostat shall be a single-stage, digital, manual changeover with HEAT-OFF-COOL system switch, fan ON-AUTO switch, and fan LO-HI switch. Thermostat shall have an LCD display with temperature and set-point(s) in °F or °C. The Thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to display specific fault condition. Thermostat shall come standard with remote temperature sensor, but may be operated with internal sensor if desired via installation of a jumper.
- c. Single Stage Digital Auto or Manual Changeover (ATA11U01)
 Thermostat shall be a single-stage, digital, auto or manual changeover with HEAT-OFF-COOL-AUTO system switch and fan ON-AUTO switch. Thermostat shall have an LCD display with temperature and set-point(s) in °F or °C. The Thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to display specific fault condition. Thermostat shall provide temperature display offset for custom applications.
- d. Single Stage Digital Automatic Changeover with Two-Speed Fan Control (ATA11C04) Recommended for Console Remote-Mount Thermostat (DXM required)
 Thermostat shall be a single-stage, digital, auto or manual changeover with HEAT-OFF-COOL-AUTO system switch, fan ON-AUTO switch, and fan LO-HI switch. Thermostat shall have an LCD display with temperature and set-point(s) in °F or °C. The Thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to display specific fault condition. Thermostat shall come standard with remote temperature sensor, but may be operated with internal sensor if desired via installation of a jumper.
- . Multistage Digital Automatic Changeover (ATA22U01)
 Thermostat shall be multi-stage (2H/2C), manual or automatic changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Thermostat shall have an LCD display with temperature, set-point(s), mode, and status indication. The temperature indication shall be selectable for °F or °C. The thermostat shall provide permanent memory of set-point(s) without batteries. A fault LED shall be provided to indicate specific fault condition(s). Thermostat shall provide temperature display offset for custom applications. Thermostat shall allow unit to provide better dehumidification with optional DXM controller by automatically using lower fan speed on stage 1 cooling (higher latent cooling) as main cooling mode, and automatically shifting to high speed fan on stage 2 cooling.
- f. Single Stage Manual Changeover Programmable 5/2 Day (ATP11N01)
 Thermostat shall be 5 day/2 day programmable (with up to 4 set points per day), single stage (1H/1C), manual changeover with HEAT-OFF-COOL system settings and fan ON-AUTO settings. Thermostat shall have an LCD display with temperature, set-point(s), mode, and status indication. The temperature indication shall be selectable for °F or °C. The thermostat shall provide permanent memory of set-point(s) without batteries. Thermostat shall provide convenient override feature to temporarily change set point.
- g. Multistage Automatic or Manual Changeover Programmable 5/2 Day (ATP21U01)
 Thermostat shall be 5 day/2 day programmable (with up to 4 set points per day), multi-stage (2H/1C), automatic or manual changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Thermostat shall have an LCD display with temperature, set-point(s), mode, and status indication. The temperature indication shall be selectable for °F or °C. The thermostat shall provide permanent memory of set-point(s) without batteries. Thermostat shall provide convenient override feature to temporarily change set point.
- Multistage Automatic or Manual Changeover Programmable 7 Day (ATP32U01)
 Thermostat shall be 7 day programmable (with up to 4 set points per day), multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Thermostat shall have a blue backlit dot matrix LCD display with temperature, set-points, mode, and status indication. The temperature indication shall be selectable for °F or °C. Time display shall be selectable for 12 or 24 hour clock. Fault identification shall be provided (when used with ClimateMaster CXM or DXM controls) to simplify troubleshooting by providing specific unit fault at the thermostat with red backlit LCD during unit lockout. The thermostat shall provide permanent memory of set-points without batteries. Thermostat shall provide heating set-point range limit, cooling set-point range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide an installer setup for configuring options and for setup of servicing contractor name and contact information. Thermostat shall allow the use of an accessory remote and/or outdoor temperature sensor (AST008). Thermostat navigation shall be accomplished via five buttons (up/down/right/left/select) with menu-driven selections for ease of use and programming.

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Multistage Automatic or Manual Changeover Programmable 7 Day with Humidity Control (ATP32U02) Thermostat shall be 7 day programmable (with up to 4 set points per day), multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO system settings and fan ON-AUTO settings. Separate dehumidification and humidification set points shall be configurable for discreet outputs to a dehumidification option and/or an external humidifier. Installer configuration mode shall allow thermostat dehumidification mode to operate with ClimaDry reheat or with ECM fan dehumidification mode via settings changes. Thermostat shall have a blue backlit dot matrix LCD display with temperature, relative humidity, set-points, mode, and status indication. The temperature indication shall be selectable for °F or °C. Time display shall be selectable for 12 or 24 hour clock. Fault identification shall be provided (when used with ClimateMaster CXM or DXM controls) to simplify troubleshooting by providing specific unit fault at the thermostat with red backlit LCD during unit lockout. The thermostat shall provide permanent memory of set-points without batteries. Thermostat shall provide heating set-point range limit, cooling set-point range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. Thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. Thermostat shall provide an installer setup for configuring options and for setup of servicing contractor name and contact information. Thermostat shall allow the use of an accessory remote and/or outdoor temperature sensor (AST008). Thermostat navigation shall be accomplished via five buttons (up/down/right/left/select) with menu-driven selections for ease of use and programming.

DDC Sensors:

ClimateMaster wall mounted DDC sensor to monitor room temperature and interfaces with optional interface system described above. Several types as described below:

- a. Sensor only with no display (LON and MPC).
- b. Sensor with override (LON only).
- c. Sensor with setpoint and adjustment override (MPC only).
- d. Sensor with setpoint and adjustment override, LCD display, status/fault indication (LON and MPC).

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Submittal Change Log

Date:	Item:	Action:
07/19/06	Model Numbers	Added Rev. A to all model numbers
07/19/06	Motorized Valves	Updated Valve Cv & MOPD values
07/19/06	Motorized Valves	Updated wiring diagrams to show H.P. switch
07/19/06	Motorized Valves	Updated Specs to show H.P. switch
12/23/05	Motorized Valves	Adjusted Cv values
11/30/05	Various	Formatting changes
08/18/05	Correction Factors	Changed "Nominal" to "Rated"
08/18/05	Specifications	Updated CXM verbiage
08/18/05	Added Change Log	

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