



TRANE®

RTAA 213 - 434

**Packaged Air Cooled Helical
Rotary Liquid Chiller High Ambient
R134a (50 & 60 Hz)**

Catalog Supplement



**This catalog supplement is to be used with
C20 CA 603 E dated march 1997**



RLC-PR003-E4



**RTAA 213 - 434 (50 & 60 Hz - R134a)
Packaged Air Cooled Helical Rotary Chiller for High Ambient**

General Data 200 series

Table 1 - General Data

RTAA		213		214		215		216		217	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Compressor											
Quantity		2	2	2	2	2	2	2	2	2	2
Model	CHHB	70/70	70/70	70/85	70/85	85/85	85/85	85/100	85/100	100/100	100/100
Nb of circuits		2	2	2	2	2	2	2	2	2	2
Evaporator											
Model	ES	120	140	140	170	140	170	170	200	170	200
Water capacity	(Gallons)	28	71	71	58	71	58	58	54	58	54
Min Water Flow	(gpm)	143	158	158	179	158	179	179	176	179	176
Max Water Flow	(gpm)	457	531	431	617	531	617	617	533	617	533
Condenser											
Model	CAUW	213	215	214	216	215	217	216	218	217	218
Number of Fans		8	8	8	9	8	10	9	10	10	10
Fins / Ft		168	168	168	168	168	168	168	168	168	168
N° of Rows		3	3	3	3	3	3	3	3	3	3
Condenser Fans											
Standard Low Noise											
Air Flow	(cfm)	79292	98246	83474	107114	83474	115980	90724	111710	97974	111710
Fan Speed	(rpm)	915	1110	915	1110	915	1110	915	1110	915	1110
Fan Diameter	(mm)	762	762	762	762	762	762	762	762	762	762
General Unit											
Refrigerant Charge	(kg)	52/52	56/56	62/62	56/56	62/62	58/58	64/64	74/74	64/64	74/74
Oil Charge	(Liters)	15/15	15/15	17/17	17/17	17/17	17/17	17/20	17/20	20/20	20/20
Min Starting/Oper Ambient											
Std Unit	(Deg F/C)	32/0	32/0	32/0	32/0	32/0	32/0	32/0	32/0	32/0	32/0
Shipping Weight											
With AL. Cds Fins	(kg)	3795	4295	4370	4500	4435	4610	4590	4910	4670	4910
With CU Cds Fins	(kg)	4245	4835	4910	5040	4975	5150	5130	5640	5210	5650
Operating Weight											
With AL. Cds Fins	(kg)	3900	4570	4640	4720	4710	4830	4810	5130	4890	5130
With CU Cds Fins	(kg)	4350	5110	5180	5260	5250	5370	5350	5860	5430	5870
Dimensions											
Length	(mm)	4944	5807	5807	5807	5807	5807	5807	5807	5807	5807
Width	(mm)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Height	(mm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Water Connection Diam.											
	(mm)	139.7	168.3	168.3	168.3	168.3	168.3	168.3	168.3	168.3	168.3
Flange type											
		DN125	DN150	DN150	DN150	DN150	DN150	DN150	DN150	DN150	DN150
		PN16	PN16	PN16	PN16	PN16	PN16	PN16	PN16	PN16	PN16

Note:
Data containing information on two circuits shown as follows: Ckt1/Ckt2

General Data 300 series

Table 2 - General Data

RTAA		322		324		328	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Compressor							
Quantity		3	3	3	3	3	3
Model	CHHB	70+70/85	70+70/85	85+85/100	85+85/100	100+100/100	100+100/100
Nb of circuits		2	2	2	2	2	2
Evaporator							
Model	ES	225	225	225	225	250	250
Water capacity	(Gallons)	117	117	117	117	110	110
Min Water Flow	(gpm)	270	270	270	270	297	297
Max Water Flow	(gpm)	822	822	822	822	973	973
Condenser							
Model	CAUW	322	322	324	324	328	328
Number of Fans		12	12	14	14	16	16
Fins / Ft		168/192	168/192	168/192	168/192	168/192	168/192
N° of Rows		3/2	3/2	3/2	3/2	3/2	3/2
Condenser Fans							
Standard Low Noise							
Air Flow	(cfm)	118894	140088	139431	164607	152781	180705
Fan Speed	(rpm)	915	1110	915	1110	915	1110
Fan Diameter	(mm)	762	762	762	762	762	762
General Unit							
Refrigerant Charge	(kg)	104/59	104/59	129/59	129/59	132/61	132/61
Oil Charge	(Liters)	15+15/17	15+15/17	17+17/20	17+17/20	20+20/20	20+20/20
Min Starting/Oper Ambient							
Std Unit	(Deg F/C)	32/0	32/0	32/0	32/0	32/0	32/0
Shipping Weight							
With AL Cds Fins	(kg)	6360	6360	6885	6885	6885	6885
With CU Cds Fins	(kg)	6915	6915	7505	7505	7505	7505
Operating Weight							
With AL Cds Fins	(kg)	6800	6800	7285	7285	7285	7285
With CU Cds Fins	(kg)	7355	7355	7905	7905	7905	7905
Dimensions							
Length	(mm)	7600	7600	8480	8480	8480	8480
Width	(mm)	2200	2200	2200	2200	2200	2200
Height	(mm)	2183	2183	2183	2183	2183	2183
Water Connection Diam.							
	(mm)	168.3	168.3	168.3	168.3	168.3	168.3
Connection Type		VITAULIC					

Note:

Data containing information on two circuits shown as follows: Ckt1/Ckt2

General Data 400 Series

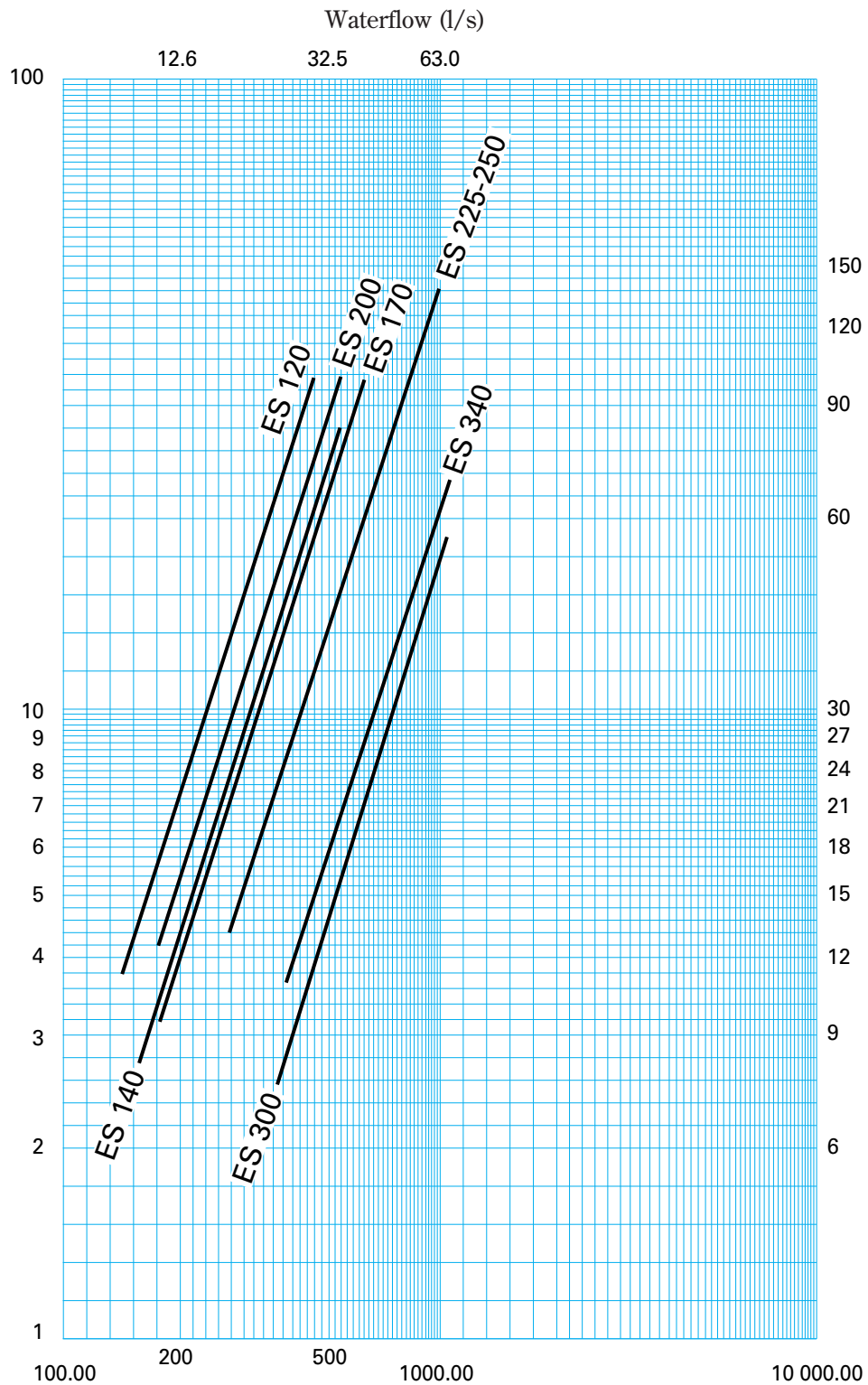
Table 3 - General Data

RTAA		430		432		434	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Compressor							
Quantity		4	4	4	4	4	4
Model	CHHB	85+85/85+85	85+85/85+85	85+85/100+100	85+85/100+100	100+100/100+100	100+100/100+100
Nb of circuits		2	2	2	2	2	2
Evaporator							
Model	ES	300	300	300	300	340	340
Water capacity	(Gallons)	176	176	176	176	162	162
Min Water Flow	(gpm)	365	365	365	365	384	384
Max Water Flow	(gpm)	1016	1016	1016	1016	1048	1048
Condenser							
Model	CAUW	430	430	432	432	434	434
Number of Fans		16	16	18	18	20	20
Fins / Ft		168	168	168	168	168	168
N° of Rows		3	3	3	3	3	3
Condenser Fans							
Standard Low Noise							
Air Flow	(cfm)	162376	191530	175725	207626	189074	223722
Fan Speed	(rpm)	915	1110	915	1110	915	1110
Fan Diameter	(mm)	762	762	762	762	762	762
General Unit							
Refrigerant Charge	(kg)	128/128	128/128	128/128	128/128	132/132	132/132
Oil Charge	(Liters)	17+17/17+17	17+17/17+17	17+17/20+20	17+17/20+20	20+20/20+20	20+20/20+20
Min Starting/Oper Ambient							
Std Unit	(Deg F/C)	32/0	32/0	32/0	32/0	32/0	32/0
Shipping Weight							
With AL Cds Fins	(kg)	9110	9110	9110	9110	9110	9110
With CU Cds Fins	(kg)	9970	9970	9970	9970	9970	9970
Operating Weight							
With AL Cds Fins	(kg)	9750	9750	9750	9750	9750	9750
With CU Cds Fins	(kg)	10600	10600	10600	10600	10600	10600
Dimensions							
Length	(mm)	10285	10285	10285	10285	10285	10285
Width	(mm)	2200	2200	2200	2200	2200	2200
Height	(mm)	2223	2223	2223	2223	2223	2223
Water Connection Diam.							
	(mm)	168.3	168.3	168.3	168.3	168.3	168.3
Connection type				VICTAULIC			

Note:
Data containing information on two circuits shown as follows: Ckt1/Ckt2

Performance Data

Figure 1 : Evaporator water pressure drop



Performance Data 50 Hz

Performance Data 200 Series

English units

Model		LWT (°F)	AMBIENT TEMPERATURE (°F)																	
			95			100			105			110			115			120		
			CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP	
			Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER
RTAA 213	40	76	79	8.9	73	82	8.3	70	86	7.8	68	89	7.3	65	93	6.8	62	98	6.6	
	42	79	80	9.2	76	84	8.6	73	87	8.0	71	91	7.5	68	94	7.0	65	100	6.7	
	44	82	82	9.4	79	85	8.8	76	89	8.2	74	92	7.7	71	95	7.2	67	101	6.9	
	45	84	82	9.5	81	86	8.9	78	89	8.3	75	93	7.8	72	96	7.3	69	102	7.0	
	46	85	83	9.6	82	87	9.0	80	90	8.4	77	93	7.9	74	97	7.4	70	103	7.1	
	48	88	84	9.9	86	88	9.2	83	91	8.7	80	95	8.1	77	98	7.6	73	104	7.3	
	50	92	86	10.1	89	89	9.5	86	93	8.9	83	96	8.3	79	100	7.8	76	106	7.5	
RTAA 214	40	84	86	9.0	81	89	8.4	78	93	7.9	75	96	7.4	73	100	6.9	69	106	6.8	
	42	88	87	9.3	85	91	8.7	82	94	8.1	79	98	7.6	76	102	7.1	72	108	7.0	
	44	92	89	9.5	88	92	8.9	85	96	8.4	82	100	7.8	79	103	7.3	75	109	7.2	
	45	93	89	9.7	90	93	9.1	87	97	8.5	84	100	7.9	81	104	7.4	77	110	7.3	
	46	95	90	9.8	92	94	9.2	89	98	8.6	86	101	8.1	83	105	7.5	78	111	7.4	
	48	99	92	10.0	96	95	9.4	92	99	8.8	89	103	8.3	86	106	7.8	82	113	7.6	
	50	103	93	10.3	99	97	9.7	96	101	9.1	93	104	8.5	89	108	8.0	85	115	7.8	
RTAA 215	40	87	92	8.6	84	95	8.0	81	99	7.5	78	103	7.1	76	107	6.6	72	113	6.7	
	42	91	93	8.8	88	97	8.3	85	101	7.8	82	105	7.3	79	109	6.8	75	115	6.9	
	44	95	95	9.1	92	99	8.6	89	103	8.0	86	106	7.5	83	110	7.1	78	117	7.1	
	45	97	96	9.2	94	99	8.7	91	103	8.1	87	107	7.6	84	111	7.2	80	118	7.2	
	46	99	96	9.4	96	100	8.8	92	104	8.3	89	108	7.8	86	112	7.3	82	119	7.3	
	48	103	98	9.6	99	102	9.0	96	106	8.5	93	110	8.0	90	114	7.5	85	120	7.5	
	50	107	100	9.9	103	103	9.3	100	107	8.7	97	111	8.2	93	115	7.7	89	122	7.7	
RTAA 216	40	100	102	9.1	96	105	8.5	93	109	8.0	90	113	7.5	87	117	7.0	82	124	7.0	
	42	104	103	9.3	101	107	8.8	97	111	8.2	94	115	7.7	91	119	7.3	86	127	7.2	
	44	108	105	9.6	105	109	9.0	101	113	8.5	98	117	7.9	95	121	7.5	90	129	7.4	
	45	111	106	9.7	107	110	9.1	103	114	8.6	100	118	8.1	96	122	7.6	92	130	7.5	
	46	113	107	9.8	109	111	9.2	106	115	8.7	102	119	8.2	98	123	7.7	94	131	7.6	
	48	117	109	10.0	113	113	9.5	110	117	8.9	106	121	8.4	102	126	7.9	97	133	7.8	
	50	121	111	10.3	118	115	9.7	114	119	9.1	110	123	8.6	106	128	8.1	101	135	8.0	
RTAA 217	40	107	109	9.0	104	114	8.5	101	118	8.0	97	122	7.5	94	126	7.0	89	133	7.0	
	42	112	112	9.2	108	116	8.7	105	120	8.2	101	124	7.7	98	128	7.2	93	136	7.2	
	44	116	114	9.5	113	118	8.9	109	122	8.4	106	126	7.9	102	130	7.4	97	138	7.4	
	45	119	115	9.6	115	119	9.0	111	123	8.5	108	127	8.0	104	131	7.5	99	139	7.5	
	46	121	116	9.7	117	120	9.1	113	124	8.6	110	128	8.1	106	133	7.6	101	141	7.6	
	48	125	118	9.9	121	122	9.3	118	126	8.8	114	131	8.3	110	135	7.8	105	143	7.8	
	50	130	120	10.1	126	124	9.5	122	129	9.0	118	133	8.5	114	137	8.0	108	145	7.9	

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00025 per ARI 550-90
2. Interpolation is permissible
3. Extrapolation is not permissible
4. kW input is for compressors only
5. Ratings are based on an evaporator drop of 10 °F
6. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power

Performance Data 50 Hz

Performance Data 300 & 400 Series

English units

Model	LWT (°F)	AMBIENT TEMPERATURE (°F)																	
		95			100			105			110			115			120		
		CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP	
		Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER
RTAA 322	40	116	131	9.1	112	137	8.4	108	142	7.9	104	147	7.3	100	153	6.8	95	162	6.2
	42	121	133	9.3	117	139	8.7	113	144	8.1	109	150	7.5	105	156	7.0	99	165	6.3
	44	126	136	9.6	122	141	8.9	118	147	8.3	113	152	7.8	109	158	7.2	104	168	6.5
	45	129	137	9.7	124	142	9.0	120	148	8.4	116	154	7.9	111	159	7.3	106	169	6.6
	46	131	138	9.8	127	144	9.1	122	149	8.5	118	155	8.0	114	161	7.4	108	170	6.7
	48	136	140	10.0	132	146	9.4	127	152	8.7	123	157	8.2	118	163	7.6	112	173	6.9
	50	142	143	10.3	137	148	9.6	132	154	8.9	127	160	8.4	123	166	7.8	116	176	7.0
RTAA 324	40	130	149	8.9	126	155	8.3	122	161	7.8	118	167	7.3	114	174	6.8	108	184	6.2
	42	136	152	9.2	132	158	8.6	128	164	8.0	123	170	7.5	119	176	7.0	113	187	6.4
	44	142	155	9.4	137	161	8.8	133	167	8.3	129	173	7.7	124	179	7.2	118	190	6.5
	45	145	156	9.5	140	162	8.9	136	168	8.4	131	175	7.8	127	181	7.3	120	192	6.6
	46	148	157	9.6	143	163	9.0	138	170	8.5	134	176	7.9	129	182	7.4	123	193	6.7
	48	153	160	9.9	149	166	9.3	144	172	8.7	139	179	8.1	135	185	7.6	128	196	6.9
	50	159	162	10.1	154	169	9.5	149	175	8.9	145	182	8.3	140	188	7.8	133	199	7.1
RTAA 328	40	148	166	9.0	143	173	8.5	138	179	7.9	134	185	7.5	129	192	7.0	123	203	6.3
	42	154	169	9.2	149	176	8.7	144	182	8.2	140	189	7.7	135	195	7.2	128	207	6.5
	44	160	173	9.5	155	179	8.9	150	186	8.4	145	192	7.8	140	199	7.4	133	211	6.7
	45	163	174	9.6	158	181	9.0	153	187	8.5	148	194	7.9	143	200	7.5	136	213	6.7
	46	166	176	9.7	161	182	9.1	156	189	8.6	151	196	8.0	146	202	7.5	139	214	6.8
	48	172	179	9.9	167	186	9.3	162	192	8.7	157	199	8.2	152	206	7.7	144	218	7.0
	50	178	182	10.1	173	189	9.5	168	196	8.9	163	202	8.4	157	209	7.9	149	222	7.1
RTAA 430	40	163	188	8.9	157	196	8.3	152	204	7.8	147	212	7.3	141	219	6.8	134	233	6.1
	42	170	191	9.2	165	199	8.6	159	207	8.0	154	215	7.5	148	223	7.0	141	236	6.3
	44	177	194	9.5	172	202	8.8	166	210	8.3	160	218	7.7	155	226	7.2	147	240	6.5
	45	181	196	9.6	175	204	9.0	170	212	8.4	164	220	7.8	158	228	7.3	150	242	6.6
	46	185	198	9.7	179	206	9.1	173	214	8.5	167	222	7.9	161	230	7.4	153	244	6.7
	48	192	201	10.0	186	209	9.3	180	217	8.7	174	225	8.2	168	234	7.6	160	248	6.9
	50	200	204	10.2	194	212	9.6	187	221	8.9	181	229	8.4	175	237	7.8	166	251	7.1
RTAA 432	40	176	203	8.9	170	211	8.3	165	219	7.8	159	227	7.3	154	235	6.8	146	250	6.2
	42	183	206	9.2	178	215	8.6	172	223	8.0	166	231	7.5	160	240	7.0	152	254	6.4
	44	191	210	9.4	185	218	8.8	179	227	8.2	173	235	7.7	167	244	7.2	159	258	6.5
	45	195	212	9.5	189	220	8.9	183	229	8.4	177	237	7.8	171	246	7.3	162	260	6.6
	46	199	214	9.6	193	222	9.0	187	231	8.5	180	239	7.9	174	248	7.4	166	262	6.7
	48	206	217	9.9	200	226	9.2	194	234	8.7	187	243	8.1	181	252	7.6	172	267	6.9
	50	214	221	10.1	208	230	9.4	201	238	8.9	195	247	8.3	188	256	7.8	179	271	7.0
RTAA 434	40	195	221	9.1	189	229	8.5	183	238	8.0	177	246	7.5	171	255	7.0	162	270	6.3
	42	203	225	9.3	197	234	8.7	191	242	8.2	184	251	7.7	178	260	7.2	169	275	6.5
	44	211	229	9.5	205	238	8.9	198	247	8.4	192	255	7.9	186	264	7.4	176	280	6.7
	45	215	231	9.6	209	240	9.0	202	249	8.5	196	258	8.0	189	266	7.5	180	282	6.7
	46	219	233	9.7	213	242	9.1	206	251	8.6	200	260	8.0	193	269	7.6	183	285	6.8
	48	228	238	9.9	221	247	9.3	214	256	8.8	207	264	8.2	200	273	7.7	190	290	7.0
	50	236	242	10.1	229	251	9.5	222	260	8.9	215	269	8.4	208	278	7.9	197	295	7.1

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00025 per ARI 550-90
2. Interpolation is permissible
3. Extrapolation is not permissible
4. kW input is for compressors only
5. Ratings are based on an evaporator drop of 10 °F
6. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power

Performance Data 50 Hz

Table 6 - Performance Data 200 Series

Metric units

Model	LWT (°C)	AMBIENT TEMPERATURE (°C)											
		35			40			43			46		
		CAP	INP	COP	CAP	INP	COP	CAP	INP	COP	CAP	INP	COP
		kW	kW		kW	kW		kW	kW		kW	kW	
RTAA 213	5	272	80	2.9	255	86	2.5	245	89	2.3	235	93	2.2
	6	282	81	2.9	264	87	2.6	254	91	2.4	243	94	2.2
	7	291	82	3.0	274	88	2.7	263	92	2.5	252	95	2.3
	8	302	83	3.1	283	89	2.7	272	93	2.5	261	97	2.3
	9	312	85	3.1	293	91	2.8	282	95	2.6	271	98	2.4
	10	322	86	3.2	303	92	2.8	291	96	2.6	280	99	2.4
RTAA 214	5	302	87	3.0	284	93	2.6	273	97	2.4	262	100	2.3
	6	314	88	3.0	294	94	2.7	283	98	2.5	272	102	2.3
	7	325	89	3.1	305	95	2.8	294	100	2.6	282	103	2.4
	8	337	91	3.2	317	97	2.8	305	101	2.6	293	104	2.4
	9	349	92	3.3	328	98	2.9	316	102	2.7	303	106	2.5
	10	361	93	3.3	340	100	3.0	327	104	2.7	314	107	2.6
RTAA 215	5	312	92	2.9	294	99	2.6	283	103	2.4	272	107	2.2
	6	324	94	3.0	305	100	2.6	294	105	2.4	283	108	2.3
	7	337	95	3.0	317	102	2.7	306	106	2.5	294	110	2.3
	8	349	97	3.1	329	103	2.8	317	108	2.6	305	112	2.4
	9	362	98	3.2	341	105	2.8	329	109	2.6	317	113	2.5
	10	375	100	3.3	353	106	2.9	341	111	2.7	328	115	2.5
RTAA 216	5	358	103	3.0	337	109	2.7	325	114	2.5	313	118	2.3
	6	371	104	3.1	350	111	2.7	337	116	2.5	325	119	2.4
	7	385	106	3.1	363	113	2.8	350	117	2.6	337	121	2.4
	8	399	108	3.2	376	114	2.9	362	119	2.7	349	123	2.5
	9	412	109	3.3	389	116	2.9	375	121	2.7	361	125	2.5
	10	427	111	3.3	402	118	3.0	388	123	2.8	374	127	2.6
RTAA 217	5	386	111	3.0	363	118	2.7	351	122	2.5	338	126	2.3
	6	399	112	3.0	376	119	2.7	363	124	2.5	350	128	2.4
	7	413	114	3.1	390	121	2.8	376	126	2.6	363	130	2.4
	8	427	116	3.2	403	123	2.8	390	128	2.6	376	132	2.5
	9	442	118	3.2	417	125	2.9	403	130	2.7	389	134	2.5
	10	456	120	3.3	431	127	2.9	417	132	2.8	402	136	2.6

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0440 per ARI 550-90
2. Interpolation is permissible
3. Extrapolation is not permissible
4. kW input is for compressors only
5. Ratings are based on an evaporator drop of 5.6 °C
6. COP = Coefficient of performance (kW cooling/kW input). Power inputs include compressors, condenser fans and control power.

Performance Data 50 Hz

Table 7 - Performance Data 300 & 400 Series

Metric units

Model	LWT (°C)	AMBIENT TEMPERATURE (°C)											
		35			40			43			46		
		CAP	INP	COP	CAP	INP	COP	CAP	INP	COP	CAP	INP	COP
		kW	kW		kW	kW		kW	kW		kW	kW	
RTAA 322	5	418	132	2.8	391	142	2.5	376	148	2.3	361	155	2.1
	6	433	134	2.9	406	144	2.6	390	150	2.4	374	157	2.2
	7	449	136	3.0	421	146	2.6	405	152	2.4	388	159	2.2
	8	465	138	3.0	436	148	2.7	419	155	2.5	402	161	2.3
	9	481	141	3.1	452	150	2.7	434	157	2.5	417	164	2.3
	10	498	143	3.1	468	153	2.8	450	159	2.6	432	166	2.4
RTAA 324	5	468	151	2.8	441	161	2.5	426	168	2.3	410	175	2.2
	6	486	153	2.9	458	163	2.6	442	171	2.4	426	178	2.2
	7	504	155	3.0	475	166	2.6	459	173	2.4	442	180	2.3
	8	522	158	3.0	493	168	2.7	475	176	2.5	458	183	2.3
	9	541	160	3.1	510	171	2.7	493	178	2.5	475	186	2.4
	10	559	162	3.1	528	173	2.8	510	181	2.6	492	188	2.4
RTAA 328	5	530	168	2.9	500	179	2.6	482	186	2.4	465	194	2.2
	6	548	171	3.0	517	182	2.6	500	189	2.4	483	197	2.3
	7	567	173	3.0	536	185	2.7	518	192	2.5	500	200	2.3
	8	587	176	3.1	555	187	2.7	536	195	2.5	518	203	2.4
	9	607	179	3.1	574	190	2.8	555	198	2.6	536	206	2.4
	10	627	182	3.2	593	194	2.8	574	202	2.6	554	210	2.5
RTAA 430	5	585	190	2.8	550	203	2.5	530	212	2.3	510	221	2.1
	6	607	192	2.9	572	206	2.6	551	215	2.4	530	225	2.2
	7	631	195	3.0	594	209	2.6	572	218	2.4	551	228	2.3
	8	654	198	3.0	617	212	2.7	594	221	2.5	572	231	2.3
	9	678	201	3.1	639	215	2.8	616	225	2.5	593	234	2.4
	10	702	204	3.2	663	218	2.8	639	228	2.6	615	237	2.4
RTAA 432	5	632	205	2.8	595	219	2.5	574	228	2.3	553	238	2.2
	6	655	208	2.9	618	222	2.6	596	232	2.4	574	241	2.2
	7	679	211	3.0	640	225	2.6	618	235	2.4	596	245	2.3
	8	703	214	3.0	664	229	2.7	641	239	2.5	618	249	2.3
	9	728	218	3.1	687	232	2.7	664	242	2.5	640	252	2.4
	10	753	221	3.1	711	236	2.8	687	246	2.6	663	256	2.4
RTAA 434	5	700	223	2.9	660	238	2.6	638	248	2.4	615	258	2.2
	6	725	227	3.0	684	241	2.6	661	252	2.4	638	262	2.3
	7	750	230	3.0	708	245	2.7	684	256	2.5	661	266	2.3
	8	776	234	3.1	733	249	2.7	709	260	2.5	684	270	2.4
	9	802	238	3.1	758	253	2.8	733	264	2.6	708	274	2.4
	10	829	242	3.2	784	257	2.8	758	268	2.6	732	279	2.5

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0440 per ARI 550-90
2. Interpolation is permissible
3. Extrapolation is not permissible
4. kW input is for compressors only
5. Ratings are based on an evaporator drop of 5.6 °C
6. COP = Coefficient of performance (kW cooling/kW input). Power inputs include compressors, condenser fans and control power.

Performance Data 60 Hz

Table 8 - Performance Data 200 Series

English units

Model	LWT (°F)	AMBIENT TEMPERATURE (°F)																	
		95			100			105			110			115			120		
		CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP	
		Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER
RTAA 213	40	93	97	9.3	90	101	8.7	86	106	8.1	83	110	7.5	79	114	6.9	76	119	6.4
	42	97	99	9.5	93	103	8.9	90	107	8.3	86	112	7.7	80	115	7.0	77	120	6.5
	44	100	101	9.8	97	105	9.1	93	109	8.5	90	114	7.9	83	117	7.2	80	122	6.6
	45	102	102	9.9	99	106	9.3	95	110	8.6	92	115	8.0	86	119	7.3	83	124	6.8
	46	104	102	10.0	101	106	9.4	97	111	8.7	94	116	8.1	88	120	7.4	85	125	6.9
	48	108	104	10.3	105	108	9.6	101	113	9.0	97	117	8.3	90	121	7.5	87	126	7.0
	50	112	106	10.5	109	110	9.8	105	115	9.2	101	119	8.5	93	123	7.7	90	128	7.2
RTAA 214	40	102	106	9.3	99	110	8.7	95	115	8.2	92	120	7.6	86	124	7.0	83	129	6.4
	42	107	108	9.6	103	112	9.0	99	117	8.4	96	122	7.8	88	125	7.1	85	130	6.5
	44	111	110	9.9	107	114	9.2	103	119	8.6	100	124	8.0	92	127	7.3	88	132	6.7
	45	113	111	10.0	109	115	9.4	106	120	8.7	102	125	8.2	96	129	7.5	92	134	6.9
	46	116	112	10.1	112	116	9.5	108	121	8.9	104	126	8.3	98	130	7.6	94	136	7.0
	48	120	114	10.4	116	118	9.7	112	123	9.1	108	128	8.5	100	131	7.7	96	137	7.1
	50	125	116	10.6	121	120	10.0	116	125	9.3	112	130	8.7	104	133	7.9	100	139	7.3
RTAA 215	40	106	113	9.1	103	117	8.5	99	122	8.0	96	127	7.4	90	131	6.8	87	137	6.3
	42	111	115	9.4	107	119	8.8	104	124	8.2	100	129	7.7	92	132	6.9	89	138	6.4
	44	116	116	9.6	112	121	9.0	108	126	8.4	104	131	7.9	96	134	7.1	93	140	6.6
	45	118	117	9.8	114	122	9.1	110	127	8.6	106	132	8.0	100	136	7.4	97	142	6.8
	46	120	118	9.9	117	123	9.3	113	128	8.7	109	133	8.1	103	137	7.5	99	143	6.9
	48	125	120	10.2	121	125	9.5	117	130	8.9	113	135	8.3	105	138	7.6	101	144	7.0
	50	130	122	10.4	126	127	9.8	122	132	9.2	118	137	8.6	109	141	7.8	105	147	7.2
RTAA 216	40	114	123	9.1	111	127	8.6	107	132	8.0	103	137	7.5	98	142	6.9	94	148	6.5
	42	119	125	9.3	115	130	8.8	112	134	8.2	108	140	7.7	100	143	7.0	96	149	6.6
	44	124	127	9.6	120	132	9.0	116	137	8.5	112	142	7.9	104	145	7.2	101	151	6.7
	45	126	128	9.7	122	133	9.1	118	138	8.6	114	143	8.0	108	148	7.4	105	154	6.9
	46	129	130	9.8	125	134	9.2	121	139	8.7	117	144	8.1	111	149	7.5	107	155	7.0
	48	134	132	10.1	129	136	9.5	125	141	8.9	121	147	8.3	113	150	7.6	109	156	7.1
	50	139	134	10.3	134	139	9.7	130	144	9.1	126	149	8.5	117	153	7.8	113	159	7.3
RTAA 217	40	125	132	9.4	121	136	8.9	117	141	8.3	113	147	7.8	109	152	7.2	105	158	6.8
	42	130	134	9.6	126	139	9.1	122	144	8.5	118	149	8.0	109	153	7.3	106	159	6.8
	44	135	137	9.9	131	141	9.3	126	146	8.7	122	152	8.2	114	155	7.5	110	162	7.0
	45	138	138	10.0	133	143	9.4	129	148	8.8	125	153	8.3	118	158	7.6	115	165	7.1
	46	140	139	10.1	136	144	9.5	131	149	8.9	127	155	8.4	121	159	7.7	117	166	7.2
	48	145	142	10.3	141	147	9.7	136	152	9.1	132	158	8.5	123	161	7.8	119	168	7.3
	50	151	144	10.5	146	149	9.9	141	155	9.3	137	160	8.7	128	164	8.0	124	171	7.5

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00025 per ARI 550-90
2. Interpolation is permissible
3. Extrapolation is not permissible
4. kW input is for compressors only
5. Ratings are based on an evaporator drop of 10 °F
6. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.

Performance Data 60 Hz

Table 9 - Performance Data 300 & 400 Series

English units

Model	LWT (°F)	AMBIENT TEMPERATURE (°F)																	
		95			100			105			110			115			120		
		CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP		CAP	INP	
		Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER	Tons	kW	EER
RTAA 322	40	136	156	8.6	131	162	8.1	127	169	7.5	122	176	7.0	116	183	6.5	112	191	6.0
	42	142	158	8.9	137	165	8.3	132	171	7.7	127	178	7.2	118	183	6.5	113	191	6.0
	44	147	161	9.1	142	167	8.5	137	174	7.9	133	181	7.4	123	186	6.7	118	194	6.2
	45	150	163	9.2	145	169	8.6	140	176	8.0	135	183	7.5	128	189	6.9	123	197	6.4
	46	153	164	9.3	148	170	8.7	143	177	8.1	138	184	7.6	130	191	7.0	125	199	6.5
	48	159	167	9.5	154	173	8.9	149	180	8.3	143	187	7.8	133	192	7.1	128	201	6.5
	50	165	169	9.8	160	176	9.1	154	183	8.5	149	190	8.0	138	195	7.2	133	204	6.7
RTAA 324	40	152	177	8.4	147	184	7.9	142	191	7.4	138	199	6.9	132	206	6.4	127	215	6.0
	42	158	180	8.7	153	187	8.1	148	194	7.6	143	202	7.1	133	207	6.5	129	216	6.1
	44	165	183	8.9	159	190	8.4	154	197	7.8	149	205	7.3	139	210	6.7	134	219	6.2
	45	168	184	9.0	163	191	8.5	158	199	7.9	152	207	7.4	144	213	6.9	140	222	6.4
	46	171	186	9.1	166	193	8.6	161	200	8.1	156	208	7.5	147	215	7.0	143	224	6.5
	48	178	189	9.4	172	196	8.8	167	204	8.3	162	212	7.7	150	217	7.1	145	226	6.6
	50	185	192	9.6	179	199	9.0	174	207	8.5	168	215	7.9	156	220	7.2	151	230	6.8
RTAA 328	40	172	197	8.5	166	204	8.0	161	211	7.6	156	220	7.1	150	228	6.6	145	237	6.2
	42	178	200	8.8	173	207	8.2	167	215	7.7	162	223	7.3	151	228	6.6	146	238	6.2
	44	185	204	9.0	180	211	8.4	174	219	7.9	169	227	7.5	157	232	6.8	152	242	6.4
	45	189	206	9.1	183	213	8.5	177	221	8.0	172	229	7.5	163	236	7.0	158	246	6.5
	46	192	207	9.2	186	215	8.6	181	223	8.1	175	231	7.6	167	238	7.1	162	248	6.6
	48	199	211	9.4	194	219	8.8	188	227	8.3	182	235	7.8	170	240	7.2	165	250	6.7
	50	207	215	9.6	201	222	9.0	195	231	8.5	189	239	8.0	177	245	7.3	171	255	6.9
RTAA 430	40	190	223	8.5	184	231	8.0	177	241	7.4	171	251	7.0	164	260	6.4	158	272	6.0
	42	198	226	8.8	191	235	8.2	185	245	7.7	179	255	7.2	165	262	6.5	160	273	6.0
	44	206	230	9.0	200	239	8.4	193	249	7.9	187	259	7.4	173	266	6.7	167	277	6.2
	45	210	232	9.1	204	241	8.6	197	250	8.0	190	261	7.5	180	270	6.9	174	281	6.4
	46	215	234	9.2	208	243	8.7	201	252	8.1	194	263	7.6	184	272	7.0	178	283	6.5
	48	223	238	9.5	216	247	8.9	209	256	8.3	202	267	7.8	188	274	7.1	181	285	6.6
	50	232	241	9.7	225	251	9.1	218	260	8.6	211	271	8.0	196	278	7.3	189	290	6.8
RTAA 432	40	204	240	8.5	198	249	7.9	192	259	7.4	185	269	7.0	177	279	6.5	171	291	6.0
	42	213	244	8.7	206	253	8.2	200	263	7.6	193	274	7.2	179	280	6.5	173	292	6.1
	44	221	248	8.9	214	257	8.4	208	267	7.8	201	278	7.3	187	285	6.7	180	297	6.2
	45	226	250	9.0	219	259	8.5	212	269	7.9	205	280	7.4	194	289	6.9	188	302	6.4
	46	230	252	9.1	223	262	8.6	216	272	8.0	209	283	7.5	198	292	7.0	192	304	6.5
	48	239	257	9.3	232	266	8.8	224	276	8.2	217	287	7.7	202	294	7.0	196	306	6.6
	50	248	261	9.6	240	270	9.0	233	281	8.4	226	292	7.9	210	299	7.2	203	311	6.8
RTAA 434	40	227	261	8.6	220	271	8.1	213	281	7.6	206	292	7.1	197	302	6.6	191	315	6.2
	42	236	266	8.8	228	275	8.3	221	286	7.8	214	297	7.3	199	303	6.7	193	316	6.2
	44	245	270	9.0	237	280	8.5	230	291	8.0	223	302	7.5	207	309	6.8	201	321	6.4
	45	249	273	9.1	242	283	8.6	234	293	8.1	227	304	7.6	216	314	7.0	209	327	6.6
	46	254	275	9.2	246	285	8.7	239	296	8.2	231	307	7.7	220	317	7.1	213	330	6.6
	48	264	280	9.4	256	290	8.9	248	301	8.3	240	312	7.8	224	319	7.2	218	332	6.7
	50	273	285	9.6	265	295	9.1	257	306	8.5	249	318	8.0	233	325	7.4	226	338	6.9

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00025 per ARI 550-90
2. Interpolation is permissible
3. Extrapolation is not permissible
4. kW input is for compressors only
5. Ratings are based on an evaporator drop of 10 °F
6. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.

Performance Data 60 Hz

Table 10 - Performance Data 200 Series

Metric units

Model	LWT (°C)	AMBIENT TEMPERATURE (°C)											
		35			40			45			50		
		CAP	INP	COP	CAP	INP	COP	CAP	INP	COP	CAP	INP	COP
		kW	kW		kW	kW		kW	kW		kW	kW	
RTAA 213	5	334	98	2.8	313	106	2.4	300	111	2.3	287	116	2.1
	6	346	100	2.8	324	107	2.5	311	112	2.3	298	117	2.1
	7	358	101	2.9	336	109	2.6	322	114	2.4	309	119	2.2
	8	371	103	3.0	348	110	2.6	334	115	2.4	320	121	2.2
	9	383	105	3.0	360	112	2.7	345	117	2.5	331	123	2.3
	10	396	106	3.1	372	114	2.7	357	119	2.5	343	124	2.3
RTAA 214	5	369	107	2.8	345	115	2.5	332	120	2.3	318	126	2.1
	6	382	109	2.9	358	117	2.5	344	122	2.3	330	128	2.2
	7	396	111	2.9	372	118	2.6	357	124	2.4	343	129	2.2
	8	411	112	3.0	385	120	2.7	370	126	2.5	355	131	2.3
	9	425	114	3.1	399	122	2.7	383	127	2.5	368	133	2.3
	10	440	116	3.1	413	124	2.8	397	129	2.6	381	135	2.4
RTAA 215	5	383	114	2.7	360	122	2.4	347	127	2.2	333	133	2.1
	6	398	115	2.8	374	124	2.5	360	129	2.3	346	135	2.1
	7	413	117	2.8	389	125	2.5	374	131	2.4	360	137	2.2
	8	428	119	2.9	403	127	2.6	388	133	2.4	373	139	2.2
	9	444	121	3.0	418	129	2.7	402	135	2.5	387	141	2.3
	10	459	123	3.1	433	131	2.7	417	137	2.5	401	143	2.4
RTAA 216	5	412	124	2.7	388	133	2.4	374	138	2.3	360	144	2.1
	6	427	126	2.8	402	135	2.5	388	140	2.3	374	146	2.1
	7	442	128	2.8	417	137	2.5	402	142	2.4	387	148	2.2
	8	457	130	2.9	432	139	2.6	416	144	2.4	402	151	2.3
	9	473	132	3.0	447	141	2.6	431	147	2.5	416	153	2.3
	10	489	134	3.0	462	143	2.7	446	149	2.5	430	155	2.4
RTAA 217	5	449	133	2.8	423	142	2.5	408	148	2.3	394	154	2.2
	6	465	135	2.9	438	144	2.6	423	150	2.4	408	156	2.2
	7	481	137	2.9	454	146	2.6	438	152	2.4	423	159	2.3
	8	498	140	3.0	469	149	2.7	453	155	2.5	438	161	2.3
	9	514	142	3.0	485	151	2.7	469	157	2.5	453	164	2.4
	10	531	145	3.1	502	154	2.8	485	160	2.6	468	167	2.4

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0440 per ARI 550-90
2. Interpolation is permissible
3. Extrapolation is not permissible
4. kW input is for compressors only
5. Ratings are based on an evaporator drop of 5.6 °C
6. COP = Coefficient of performance (kW cooling/kW input). Power inputs include compressors, condenser fans and control power.

Performance Data 60 Hz

Table 11 - Performance Data 300 & 400 Series

Metric units

Model	LWT (°C)	AMBIENT TEMPERATURE (°C)											
		35			40			45			50		
		CAP	INP	COP	CAP	INP	COP	CAP	INP	COP	CAP	INP	COP
		kW	kW		kW	kW		kW	kW		kW	kW	
RTAA 322	5	488	157	2.6	458	169	2.3	440	176	2.1	423	184	1.9
	6	506	160	2.6	475	171	2.3	457	179	2.1	439	187	2.0
	7	524	162	2.7	493	174	2.4	474	181	2.2	455	190	2.0
	8	543	164	2.7	510	176	2.4	491	184	2.3	471	192	2.1
	9	562	167	2.8	528	179	2.5	508	187	2.3	488	195	2.1
	10	581	169	2.9	546	181	2.5	526	189	2.4	505	198	2.2
RTAA 324	5	545	178	2.5	514	191	2.2	496	199	2.1	478	208	1.9
	6	565	181	2.6	533	194	2.3	515	202	2.1	497	211	2.0
	7	586	184	2.6	553	197	2.3	534	205	2.2	515	214	2.0
	8	606	187	2.7	573	199	2.4	553	208	2.2	534	217	2.1
	9	628	189	2.7	593	202	2.5	573	211	2.3	553	220	2.1
	10	649	192	2.8	614	205	2.5	593	214	2.3	573	224	2.2
RTAA 328	5	615	198	2.5	581	212	2.3	561	221	2.1	542	230	2.0
	6	637	202	2.6	602	215	2.3	582	224	2.2	562	234	2.0
	7	659	205	2.6	623	218	2.4	602	227	2.2	582	237	2.1
	8	681	208	2.7	644	222	2.4	623	231	2.3	602	241	2.1
	9	704	212	2.8	666	225	2.5	644	235	2.3	623	245	2.2
	10	727	215	2.8	688	229	2.5	666	238	2.4	645	248	2.2
RTAA 430	5	681	224	2.5	642	241	2.2	618	252	2.1	595	263	1.9
	6	707	228	2.6	667	244	2.3	642	255	2.1	619	267	2.0
	7	734	231	2.7	692	248	2.4	667	259	2.2	642	270	2.0
	8	761	234	2.7	718	251	2.4	692	262	2.3	667	274	2.1
	9	788	238	2.8	744	255	2.5	717	266	2.3	691	278	2.1
	10	816	241	2.8	771	258	2.5	744	270	2.4	716	282	2.2
RTAA 432	5	733	242	2.5	692	259	2.2	667	270	2.1	644	282	1.9
	6	760	246	2.6	717	263	2.3	692	274	2.1	668	286	2.0
	7	787	249	2.6	743	267	2.3	718	278	2.2	693	290	2.0
	8	815	253	2.7	770	271	2.4	744	282	2.2	718	295	2.1
	9	843	257	2.7	797	275	2.5	770	286	2.3	743	299	2.1
	10	872	261	2.8	824	279	2.5	797	290	2.3	769	303	2.2
RTAA 434	5	813	263	2.5	768	281	2.3	741	293	2.1	716	305	2.0
	6	841	268	2.6	795	285	2.3	768	297	2.2	742	310	2.0
	7	871	272	2.7	823	290	2.4	795	302	2.2	769	315	2.1
	8	900	276	2.7	851	295	2.4	823	307	2.3	796	320	2.1
	9	930	281	2.8	880	299	2.5	851	311	2.3	823	325	2.2
	10	961	285	2.8	910	304	2.5	880	316	2.4	851	330	2.2

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0440 per ARI 550-90

2. Interpolation is permissible

3. Extrapolation is not permissible

4. kW input is for compressors only

5. Ratings are based on an evaporator drop of 5.6 °C

6. COP = Coefficient of performance (kW cooling/kW input). Power inputs include compressors, condenser fans and control power.

Performance Data

Table 12 - ARI Part-Load Values

Unit Size	50 Hz				
	% Load	Capacity Tons	Power kW	EER	IPLV
RTAA213	100	82	82	10.1	8.7
	75	62	66	9.1	
	50	41	53	8.0	
	25	21	25	7.5	
RTAA214	100	92	89	10.6	9.2
	75	69	71	9.6	
	50	46	57	8.4	
	25	23	26	8.1	
RTAA215	100	95	95	10.3	9.0
	75	71	76	9.3	
	50	48	61	8.2	
	25	24	28	7.9	
RTAA216	100	108	105	10.6	9.3
	75	81	84	9.6	
	50	54	68	8.5	
	25	27	30	8.4	
RTAA217	100	116	114	10.5	9.1
	75	87	91	9.5	
	50	58	74	8.3	
	25	29	33	8.1	
RTAA322	100	126	136	9.5	8.2
	75	95	109	8.6	
	50	63	88	7.3	
	25	32	39	7.8	
RTAA324	100	142	155	9.4	8.1
	75	107	124	8.5	
	50	71	100	7.3	
	25	36	45	7.4	
RTAA328	100	160	173	9.5	8.2
	75	120	139	8.5	
	50	80	112	7.3	
	25	40	50	7.7	
RTAA430	100	177	194	9.5	8.2
	75	133	156	8.6	
	50	89	125	7.5	
	25	44	56	7.3	
RTAA432	100	191	210	9.4	8.2
	75	143	168	8.5	
	50	96	136	7.4	
	25	48	61	7.2	
RTAA434	100	211	229	9.5	8.3
	75	158	184	8.6	
	50	106	148	7.5	
	25	53	66	7.3	

ARI part load data.
Power kW is for compressors only.

Performance Data

Table 13 - ARI Part-Load Values

Unit Size	60 Hz				
	% Load	Capacity Tons	Power kW	EER	IPLV
RTAA213	100	100	101	9.6	10.7
	75	75	65	10.1	
	50	50	37	12.2	
	25	25	16	10.3	
RTAA214	100	113	112	10.0	10.7
	75	85	75	10.3	
	50	57	43	12.2	
	25	28	24	9.4	
RTAA215	100	116	116	9.9	10.4
	75	87	78	10.3	
	50	58	52	10.8	
	25	29	21	10.5	
RTAA216	100	124	127	9.7	10.6
	75	93	82	10.3	
	50	62	52	11.5	
	25	31	22	10.6	
RTAA217	100	135	137	9.7	11.1
	75	101	83	10.8	
	50	68	49	12.5	
	25	34	24	10.2	
RTAA322	100	147	161	8.9	9.9
	75	110	105	9.3	
	50	74	60	10.4	
	25	37	23	12.1	
RTAA324	100	165	183	8.8	9.6
	75	124	120	9.2	
	50	83	74	10.1	
	25	41	27	10.7	
RTAA328	100	185	204	8.8	10.1
	75	139	124	9.7	
	50	93	77	10.3	
	25	46	26	12.3	
RTAA430	100	206	230	8.9	9.1
	75	155	151	9.3	
	50	103	109	9.2	
	25	52	47	8.5	
RTAA432	100	221	248	8.8	9.6
	75	166	154	9.6	
	50	111	100	10.4	
	25	55	48	8.7	
RTAA434	100	245	270	8.9	9.8
	75	184	164	9.9	
	50	123	105	10.8	
	25	61	62	7.9	

ARI part load data.

Power kW is for compressors only.

Electrical Data 50 Hz

Table 14- Electrical Data

	RTAA	213	214	215	216	217
Compressor Quantity		2	2	2	2	2
Model (Circuit 1+2)	CHHB	70/70	70/85	85/85	85/100	100/100
RLA (1)						
Power Supply (3)	220/3/50	149/149	149/164	164/164	164/196	196/196
	380/3/50	86/86	86/95	95/95	95/114	114/114
	415/3/50	79/79	79/87	87/87	87/104	104/104
Power factor		0.89	0.89	0.89	0.89 / 0.88	0.88
Recommended	220/3/50	400	400	400	400	500
Fuse size (A)	380/3/50	250	250	250	250	315
	415/3/50	200	250	250	250	250
Unit inrush Current (2)						
Power Supply (3)	220/3/50	725	816	831	1034	1070
Starting Mode:	380/3/50	398	451	460	565	588
Part Winding	415/3/50	417	474	485	597	618
Control Power Required (110V)						
	VA	1300	1300	1300	1300	1300
Evaporator Heater	W	200	200	200	200	200
Oil Heater	W	2 x 150	2 x 150	2 x 150	2 x 150	2 x 150
Number Of Fans		8	8	8	9	10
«FLA 380/415 V , Each»	A	3.9	3.9	3.9	3.9	3.9
Starting Amps 380/415	A	14.7	14.7	14.7	14.7	14.7
Fan Motor Shaft Power	kW	1.2	1.2	1.2	1.2	1.2
Fan Motor Rated kW	kW	1.74	1.74	1.74	1.74	1.74

	RTAA	322	324	328	430	432	434
Compressor Quantity		3	3	3	4	4	4
Model (Circuit 1)	CHHB	70+70	85+85	100+100	85+85	85+85	100+100
Model (Circuit 2)	CHHB	85	100	100	85+85	100+100	100+100
RLA (1)							
Power Supply (3)	220/3/50	149/149	164/164	196/196	164/164	164/164	196/196
		164	196	196	164/164	196/196	196/196
	380/3/50	86/86	95/95	114/114	95/95	95/95	114/114
		95	114	114	95/95	114/114	114/114
	415/3/50	79/79	87/87	104/104	87/87	87/87	104/104
		87	104	104	87/87	104/104	104/104
Power factor		0.89	0.89/0.89-0.88	0.88	0.89	0.89-0.88	0.88
Recommended	220/3/50	630	630	800	800	800	1000
Fuse size (A)	380/3/50	400	400	500	500	500	630
	415/3/50	315	400	400	500	500	500
Unit inrush Current (2)							
Power Supply (3)	220/3/50	980	1218	1290	1190	1430	1501
Starting Mode:	380/3/50	552	680	726	681	809	855
Part Winding	415/3/50	568	704	746	687	824	865
Control Power Required (110V)							
	VA	2000	2000	2000	2600	2600	2600
Evaporator Heater	W	400	400	400	400	400	400
Oil Heater	W	3 x 150	3 x 150	3 x 150	4 x 150	4 x 150	4 x 150
Number Of Fans		12	14	16	16	18	20
FLA 380/415 V, Each	A	3.9	3.9	3.9	3.9	3.9	3.9
Starting Amps 380/415	A	14.7	14.7	14.7	14.7	14.7	14.7
Fan Motor Shaft Power	kW	1.2	1.2	1.2	1.2	1.2	1.2
Fan Motor Rated kW	kW	1.74	1.74	1.74	1.74	1.74	1.74

NOTES:
(1) Rated Load Amperes - RLA
50 Hz - Rated at 2.6 Bar suction Pressure and 17 Bar discharge pressure.
(2) Unit Inrush Current = Starting amps of the circuit with the larger compressor circuit including fans.
plus RLA of the second circuit including fans
(3) Voltage Utilisation Range : 220/3/50 (198-242), 400/3/50 (360-440).

Electrical Data 60 Hz

Table 15- Electrical Data

	RTAA	213	214	215	216	217
Compressor Quantity		2	2	2	2	2
Model (Circuit 1+2)	CHHB	70/70	70/85	85/85	85/100	100/100
RLA (1)						
Power Supply (3)	220/3/60	179/179	179/196	196/196	196/236	236/236
	380/3/60	104/104	104/114	114/114	114/136	136/136
	460/3/60	86/86	86/94	94/94	94/113	113/113
Power factor		0.89	0.89/0.88	0.88	0.88	0.88
Recommended	220/3/60	500	500	500	500	630
Fuse size (A)	380/3/60	315	315	315	315	400
	460/3/60	250	250	315	315	315
Unit inrush Current (2)						
Power Supply (3)	220/3/60	873	994	1017	1217	1257
Starting Mode:	380/3/60	528	599	615	729	751
Part Winding	460/3/60	425	486	500	613	632
Control Power Required (110V)						
	VA	1300	1300	1300	1300	1300
Evaporator Heater	W	200	200	200	200	200
Oil Heater	W	2 x 150	2 x 150	2 x 150	2 x 150	2 x 150
Number Of Fans		8	9	10	10	10
FLA 380 V , Each	A	5.8	5.8	5.8	5.8	5.8
Starting Amps 380V	A	34	34	34	34	34
Fan Motor Shaft Power	kW	2.4	2.4	2.4	2.4	2.4
Fan Motor Rated kW	kW	3.16	3.16	3.16	3.16	3.16

	RTAA	322	324	328	430	432	434
Compressor Quantity		3	3	3	4	4	4
Model (Circuit 1)	CHHB	70/70	85/85	100/100	85/85	85/85	100/100
Model (Circuit 2)	CHHB	85	100	100	85/85	100/100	100/100
RLA (1)							
Power Supply (3)	220/3/60	179/179	196/196	236/236	196/196	196/196	236/236
		196	236	236	196/196	236/236	236/236
	380/3/60	104/104	114/114	136/136	114/114	114/114	136/136
		114	136	136	114/114	136/136	136/136
	460/3/60	86/86	94/94	113/113	94/94	94/94	113/113
		94	113	113	94/94	113/113	113/113
Power factor		0.89-0.88	0.88	0.88	0.88	0.88	0.88
Recommended	220/3/60	800	800	1000	1000	1000	1250
Fuse size (A)	380/3/60	500	500	630	630	630	800
	460/3/60	400	400	500	500	630	630
Unit inrush Current (2)							
Power Supply (3)	220/3/60	1191	1437	1530	1446	1698	1790
Starting Mode:	380/3/60	721	867	924	880	1028	1084
Part Winding	460/3/60	590	731	782	725	869	919
Control Power Required (110V)							
	VA	2000	2000	2000	2600	2600	2600
Evaporator Heater	W	400	400	400	400	400	400
Oil Heater	W	3 x 150	3 x 150	3 x 150	4 x 150	4 x 150	4 x 150
Number Of Fans		12	14	16	16	18	20
FLA 380 V , Each	A	5.8	5.8	5.8	5.8	5.8	5.8
Starting Amps 380V	A	34	34	34	34	34	34
Fan Motor Shaft Power	kW	2.4	2.4	2.4	2.4	2.4	2.4
Fan Motor Rated kW	kW	3.16	3.16	3.16	3.16	3.16	3.16

NOTES:

- (1) Rated Load Amperes - RLA
60 Hz - Rated in accordance to UL Standard 465
- (2) Unit Inrush Current = Starting amps of the circuit with the larger compressor circuit including fans plus RLA of the second circuit including fans
- (3) Voltage Utilisation Range : 200-230/3/60 (180-253), 380/3/60 (342-418), 460/3/60 (414-506)

Microprocessor control module :

“Adaptive Control™” protection and communication capabilities

“Adaptive Control™” :

Trouble free operation

The air cooled series RTAA utilizes the most advanced microprocessor control issued from the latest development in micro-electronics. Control and protection of chiller were the two functions of previous chiller control design. «Adaptive Control» means the system takes corrective action when any of the control variables approaches a limit condition at which the protection function of previous control schemes would normally shut down the chiller. Corrective action is achieved through combined actions of compressor unloader mechanism, and fan staging. Only when the control system has exhausted the corrective actions it can take and the unit is still violating an operating limit, the unit will be shut down.

The control logic of the P.I.D. type based on the leaving chilled water temperature integrates the control of variables (current draw by the motor, evaporating and condensing temperature) maintains accurate control, minimizes the drift from the setpoint and provides better building comfort.

Improved chiller and motor protection

The control system integrates all the functions necessary to ensure safe operation of the chiller in all applications and duty conditions :

- System safeties, such as oil, water, refrigerant pressure and temperature faults.
- Motor safeties. By monitoring the motor current on each of the 3 phases, the control system ensures protection against :
 - Overload at start-up and in operation.
 - Phase loss/Power loss.
 - Phase unbalance or reversal.
 - Over/Undervoltage.
 - Welded contactors.

“Adaptive Control™”, features summary

- Ensures safe operation of the chiller.
- Keeps chiller on line.
- Optimizes total chiller power consumption.
- Ensures total chiller reliability.
- Allows easy interface.
- Minimizes service expense.



Unit mounted clear language display (UCM)

Optional features

- Tracer communication interface.
- Hardware interface with BMS system. (External chilled water setpoint).
- External current limit setpoint.
- Chilled water temperature reset.

If a fault occurs, one of 90 individual diagnostic and operating codes will display directly on the control module.

Communication

The Unit Control Module (UCM-CLD) of the RTAA offers several communication levels which considerably simplify the implementation of a telemonitoring of the chiller or its integration in a Building Management System (BMS).

Operator interface

With easy front panel programmability of daily, service start-up and machine configuration settings and setpoints, the building manager and service technician can customize the use of the UCM-CLD microcontroller to the unique conditions of the chiller plant whether the purpose of the chilled water is comfort cooling or process cooling.

All the data that is necessary for the improved operation and easy serviceability of the chiller is called up by simple keypad instructions and presented on a highly readable screen.

Convenience

Enunciation of all information is at the front panel display (including power, voltage, amps, temperatures, pressures, number of starts and operating hours). Messages are displayed using clear language.

Readability

LCD, super twist, double line 40 character display is easy to read.

It is backlit so that the display can be read in a variety of equipment room lighting conditions.

Application flexibility

The UCM-CLD is available with the output in six languages and in either English or metric (SI) units.

Telemonitoring through a parallel link

Analog input and output ports allow chiller operation optimization or easy chiller monitoring when the machine is not integrated in a BMS.

Remote running and alarm contacts

The unit provides three single pole/double-throw contact closures to indicate whether :

- a failure has occurred.
- the compressor is running.
- the compressor is running at maximum capacity. This information may be used to authorize the start of an additional chiller.

External chilled water setpoint and current limit setpoint

The UCM allows the external setting independent of the front panel setpoint by one of the following three means :

- a remote resistor (fixed or adjustable)
- 2-10 VDC input
- a 4-20 mA input.

In the same way, the motor current can be limited to optimize the total energy efficiency of the installation.

Integration into a Trane Building Management System through the Serial link

The unit can be equipped upon request with a serial link communication card.

All the data and functions available at the UCM front panel can be transmitted or accessed through the serial link. The integration in a Building Management or the chiller operation optimization in order to reduce the overall energy consumption are thus considerably simplified.

Data which can be read

Following parameters can be read by the Trane BMS through the serial link :

- Entering and leaving evaporator water temperature
- Entering and leaving condenser water temperature
- Motor current
- Operating status : compressor stopped or running, compressor running at full load or auto-limitation.

More than 100 data can be accessed or transmitted.

Orders which can be sent to the chiller

The BMS can send following orders :

- Compressor start and stop
- Motor current limit
- Chilled water setpoint reset.



Tracer Summit Chiller Plant Control

Tracer Summit's Chiller Plant Control (CPC) application provides automation and energy optimisation of chiller plant through factory tested sequencing software.

As a manufacturer of chillers for over 60 years, Trane has gained tremendous experience in chiller plant applications. The Tracer Summit Chiller Plant Control application is designed to take advantage of this expertise. This factory tested software is powerful enough to handle such sophisticated applications as decoupled, dual fuel, series, or even swing chiller systems yet is designed to allow even the novice operators to understand its set-up and operation.

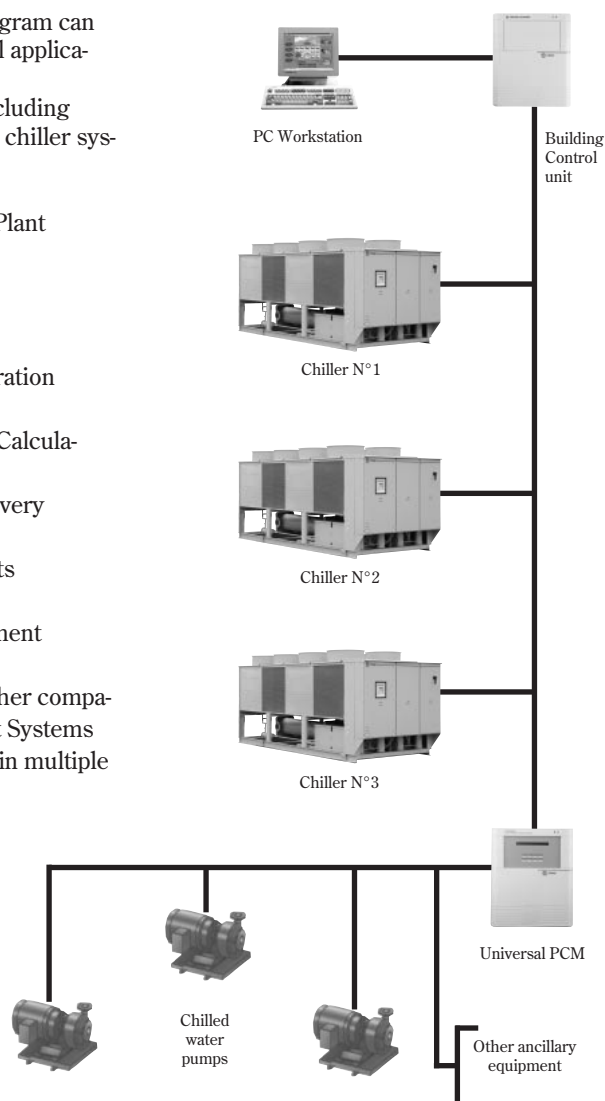
Chiller Plant Control monitors and controls multiple chillers and their related pumps and valves to balance system efficiency and equipment runtime to optimise system performance.

In addition to control and monitoring, the Chiller Plant Control program provides important status information that tells the user what is happening in the chiller plant and what will happen next, based on current operating conditions. This status information is important for troubleshooting purposes.

The Chiller Plant Control program can control comfort and industrial applications as well as special control sequences, including thermal storage and dual fuel chiller systems.

The main features of Chiller Plant Control are:

- Chiller Sequencing
- Rotation Changes
- Base, Peak and Swing Operation
- Soft Loading
- Individual Chiller Setpoint Calculations
- Failure Detection and Recovery
- Manual Override
- Chiller Performance Reports
- Remote Communications
- Pump and Ancillary Equipment Control
- Interoperability with other compatible Building Management Systems
- Control of up to 25 chillers in multiple plants.



Mechanical Specification

TRANE Series RTAA packaged air cooled liquid chiller consisting of accessible hermetic, direct-drive screw compressors, with two independent circuits evaporator, condenser, microprocessor-based controls and a unit-mounted motor starter, refrigerant charged, factory runtested and ready for operation. Unit are rated in accordance with ARI 550-90.

Compressor motor assembly

TRANE screw compressors, accessible-hermetic, direct-drive, 2950 rpm (50 Hz). Separately housed, pressure-lubricated rolling element bearing groups at each end of both rotors. Fully modulating capacity control by use of a slide valve in the rotor section of the compressors positioned by hydraulic action. Squirrel-cage two-pole induction motor, suction gas cooled.

Oil separator and filtration devices provided separate from the compressor.

Evaporator

Shell-and-tube heat exchanger with internally finned copper tubes, roller expanded into the tubes sheets. Refrigerant inside the tubes and water circulating in the shell. Maximum operating pressure refrigerant side 16 Bar (232 psig), water side 14 Bar (203) psig. 19 mm thermal insulation of flexible closed cell foam. Water flanged connections on 200 serie and victaulic grooved on 300 and 400 series. Heater cable for freeze protection.

Condenser

W-configuration High efficiency air cooled condenser. Coils are seamless copper tubes, expanded into aluminium fins. Integral oil cooler and subcooler circuits. Direct drive discharge fans with totally enclosed air over motors, having class "F" insulation and IP 55 protections. Fan guards. Leak tested at 21 Bar (304 psig), pressure rated at 35 Bar (500 psig).

Two refrigerant circuits

Each circuit including removable core filter dryer, liquid line shut-off valve, high pressure relief valve. Electronic expansion valve minimizing superheat in the evaporator and allowing chiller to run at reduced condensing temperature.

Control panel

Microprocessor-based unit control module UCM utilizing the «Adaptive Control™» concept. The UCM provides all control and safety functions including start-up and shut down, leaving chilled water control, compressor and electronic expansion valve modulation, fans sequencing, anti-recycle logic, automatic lead/lag compressor starting and load limiting. Unit protective functions include loss of chilled water flow, evaporator freezing, loss of refrigerant, low and high refrigerant pressure, reverse rotation, compressor starting and running overcurrent, phase loss, phase unbalance, phase reversal and loss of oil flow.

Clear language display (2 lines, 40 characters), door mounted, indicates over 20 operating data points including chilled water setpoint, current limit setpoint, leaving chilled water temperature, evaporator and condenser refrigerant pressures and temperatures.

Over 60 messages are displayed when a problem is detected.

Starter panel

Unit mounted starter panel, protection class IP 55.

Panel contains part winding type motor starter, single source power supply, 3-phase current transformer for motor overload protection.

Unit structure

Welded steel base frame, structural steel profiles and panels, made of galvanized sheet

steel, protected with a primary coating and finished with an acrylic paint. The paint can withstand 650 hours of salt spray test

Accessories and options

- Compressor sound attenuating enclosure
- Condenser copper fins
- Communication card
- Vibration isolators
- Disconnect switch
- Reversed water connections
- Remote clear language display.
- Pressure gauges
- Flow switch
- Communication card + load based chilled water reset
- Communication card
- Plexiglass door (starter and control panel)
- Under , over voltage protection
- Condenser protection grids
- Compressor, evaporator grids
- Discharge service valve

Factory testing

All RTAA chillers are fully run tested under load before shipment. Unit operation and all control functions are factory checked and set.

Shipment

Units ship fully assembled and single point wired ready for operation after field connection of power supply, electric interlocks and chilled water piping. Units ship on a wooden skid with refrigerant and oil operating charges.

Quality assurance

The Quality Management System applied by TRANE has been subject to independent third party assesment and approval to ISO 9001: 1994, EN ISO 9001 : 1994, BS EN ISO 9001: 1994. The products described in this catalogue are designed, manufactured and tested in accordance with the approved system requirements as defined in the TRANE Quality Manual.



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Trane reserves the right to alter any information without prior notice.