



## MILLENNIUM™ OM CENTRIFUGAL CHILLERS

**TECHNICAL DATA**

Supersedes: Nothing

Form 160.72-TD4 (498)

**TABLE 1 – STANDARD UNIT PHYSICAL DATA**

NOM. CAPACITY	TONS	2000	2250	2500	2750	3000	3500	4000	4500	5000
MODEL	—	s2000a	s2250a	s2500a	s2750a	s3000a	s3500a	s4000a	s4500a	s5000a
<b>EVAPORATOR</b>	—									
Dia x NTL	In. x Ft.	62x16	62x16	67x16	72x16	77x16	77x16	82x16	87x16	92x16
No. of Tubes	—	1626	1626	1866	2226	2456	2618	2942	3549	3675
Passes	—	2	2	2	2	2	2	2	2	2
Nozzle Size	In.	18	18	18	18	18	18	20	20	24
<b>CONDENSER</b>	—									
Dia x NTL	In. x Ft.	52x16	57x16	57x16	62x16	62x16	67x16	72x16	72x16	77x16
No. of Tubes	—	2061	2162	2272	2784	2904	3267	3684	4074	4610
Subcooler	—	224	224	224	224	224	300	300	300	360
Main Condenser	—	1837	1938	2048	2560	2680	2967	3384	3774	4250
Passes	—	2	2	2	2	2	2	2	2	2
Nozzle Size	In.	18	18	18	18	18	18	20	20	24
<b>INTERCOOLER/Vertical - Dia</b>	In.	30	30	36	36	36	42	42	42	48
<b>LINE SIZE</b>										
Suction	In.	20	24	24	24	24	30	30	30	30
Discharge	In.	16	16	18	18	18	20	20	20	24
<b>REFRIGERANT</b>	—	134a	134a	134a	134a	134a	134a	134a	134a	134a
<b>COMPRESSOR</b>	Model	238A41D	238A72D	238A83D	238A84D	255B41D	255B72D	255B84D	255A62D	255A73D
<b>Nominal Gear/Motor/ Starter (Nameplate)</b>	HP	1500	1750	2000	2000	2250	2500	3000	3500	4000
<b>DIMENSIONS</b>										
L	Ft.-In.	22-6	22-6	23-0	23-0	23-8	25-1	25-9	25-11	26-9
W	Ft.-In.	17-4	17-4	18-0	18-2	19-6	20-5	21-0	21-8	22-2
H	Ft.-In.	13-8	13-9	14-0	14-9	15-8	16-6	17-0	17-6	18-10

**TABLE 2 – STANDARD UNIT TYPICAL PERFORMANCE**

**54-44** COOLING 2.4 GPM/TON WATER 54°F TO 40°F/0.00025 FF/TURBO-B TUBE #178

**85-95** 3 GPM/TON CONDENSER WATER ENTERING 85°F/0.00025 FF/TURBO-C TUBE #202

NOM. CAPACITY	TONS	2000	2250	2500	2750	3000	3500	4000	4500	5000
MODEL	—	s2000a	s2250a	s2500a	s2750a	s3000a	s3500a	s4000a	s4500a	s5000a
<b>EVAPORATOR</b>										
Flow	GPM	4800	5400	6000	6600	7200	8400	9600	10,800	12,000
Entering Temperature	°F	54	54	54	54	54	54	54	54	54
Leaving Temperature	°F	44	44	44	44	44	44	44	44	44
Fouling Factor	—	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Tube Velocity	FPS	6.4	7.2	7.0	6.4	6.4	7.0	7.1	6.6	7.1
Pressure Drop	Ft.	24.2	29.7	28.0	24.4	23.9	28.0	28.9	25.9	29.3
Tube Identification No.	—	178	178	178	178	178	178	178	178	178
Eliminators	Yes/No	No	No	No	No	No	Yes	Yes	Yes	Yes
<b>CONDENSER</b>										
Flow	GPM	6000	6750	7500	8250	9000	10,500	12,000	13,500	15,000
Entering Temperature	°F	85	85	85	85	85	85	85	85	85
Leaving Temperature	°F	94.2	94.2	94.2	94.2	94.2	94.2	94.2	94.2	94.2
Fouling Factor	—	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Tube Velocity	FPS	6.5	7	7.4	6.7	7	7.2	7.3	7.4	7.3
Pressure Drop	Ft.	23.4	26.4	29.2	24.2	26.2	28.2	29.1	30.3	29.8
Tube Identification No.	—	202	202	202	202	202	202	202	202	202
<b>REFRIGERANT</b>										
Charge	Lb.	134a	134a	134a	134a	134a	134a	134a	134a	134a
<b>COMPRESSOR</b>										
Model	Model	238A41	238A72	238A83	238A84	255B41	255B72	255B84	255A62	255A73
FLSHP	HP	1403	1578	1746	1912	2105	2443	2788	3158	3511
RPM	—	4864	4858	4876	4911	3996	4016	4027	3382	3391
<b>MOTOR</b>										
Size	HP	1500	1750	2000	2000	2250	2500	3000	3500	4000
KW - w/o Liquid Injection	KW	1080	1216	1345	1473	1621	1882	2148	2432	2705
<b>UNIT POWER</b>										
	KW/Ton	0.540	0.540	0.538	0.536	0.54	0.538	0.537	0.54	0.541
<b>SOUND</b>										
Design	dBA	88	88	88	88	88	88	88	88	88
Typical Load	dBA	90	90	90	90	90	90	90	90	90
Minimum Load	dBA	93	93	93	93	93	93	93	93	93
<b>WEIGHT</b>										
Shipping	Lb.	100,716	105,465	114,967	127,084	153,292	163,526	183,847	199,594	223,983
Operating	Lb.	121,098	127,791	139,913	156,056	184,423	198,246	224,815	248,143	281,070
<b>PUMPOUT UNIT</b>										
	Dia x L	36x16	36x16	36x16	42x16	42x16	42x16	42x18	42x18	42x20

**TABLE 3 – STANDARD UNIT TYPICAL PERFORMANCE****50-40** COOLING 2.4 GPM/TON WATER 50°F TO 40°F/0.00025 FF/TURBO-B TUBE #178**85-95** 3 GPM/TON CONDENSER WATER ENTERING 85°F/0.00025 FF/TURBO-C TUBE #202

NOM. CAPACITY	TONS	2000	2250	2500	2750	3000	3500	4000	4500	5000
MODEL	—	s2000a	s2250a	s2500a	s2750a	s3000a	s3500a	s4000a	s4500a	s5000a
<b>EVAPORATOR</b>	—									
Flow	GPM	4800	5400	6000	6600	7200	8400	9600	10,800	12,000
Entering Temperature	°F	50	50	50	50	50	50	50	50	50
Leaving Temperature	°F	40	40	40	40	40	40	40	40	40
Fouling Factor	—	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Tube Velocity	FPS	6.4	7.2	7.0	6.4	6.4	7.0	7.1	6.6	7.1
Pressure Drop	Ft.	24.6	30.2	28.5	24.9	24.3	28.5	29.4	26.3	29.9
Tube Identification No.	—	178	178	178	178	178	178	178	178	178
Eliminators	Yes/No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
<b>CONDENSER</b>	—									
Flow	GPM	6000	6750	7500	8250	9000	10,500	12,000	13,500	15,000
Entering Temperature	°F	85	85	85	85	85	85	85	85	85
Leaving Temperature	°F	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3
Fouling Factor	—	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Tube Velocity	FPS	6.5	7.0	7.4	6.7	7.0	7.2	7.3	7.4	7.3
Pressure Drop	Ft.	23.4	26.4	29.2	24.2	26.2	28.2	29.1	30.3	29.8
Tube Identification No.	—	202	202	202	202	202	202	202	202	202
<b>REFRIGERANT</b>	—	R-134a	R-134a	R-134a	R-134a	R-134a	R-134a	R-134a	R-134a	R-134a
Charge	Lb.	5201	5764	6189	7146	7251	8010	9347	9865	10,487
<b>COMPRESSOR</b>	Model	238A41D	238A72D	238A83D	238A84D	255B41D	255B72D	255B84D	255A62D	255A73D
FLSHP	HP	1480	1714	1908	2098	2271	2666	3056	3425	3823
RPM	—	5054	5062	5095	5138	4152	4194	4213	3521	3537
<b>MOTOR</b>										
Size/Nameplate HP	HP	1750	1750	2000	2250	2500	2750	3500	3500	4000
KW - w/o Liquid Injection	KW	1166	1321	1470	1616	1749	2054	2354	2638	2945
<b>UNIT POWER</b>	KW/Ton	0.583	0.587	0.588	0.588	0.583	0.587	0.588	0.586	0.589
<b>SOUND</b>										
Design	dBA	87.5	87.5	87.5	87.5	87.5	87.5	87.5	87.5	87.5
Typical Load (60% ±)	dBA	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5
Minimum Load (Hot Gas)	dBA	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5
<b>WEIGHT</b>										
Shipping	Lb.	102,246	105,465	113,199	128,554	154,762	164,996	185,317	201,064	219,929
Operating	Lb.	122,644	127,807	137,870	157,547	185,914	199,739	226,311	249,643	276,255
<b>PUMPOUT UNIT - Receiver Size</b>	Dia x L	36x16	36x16	36x16	42x16	42x16	42x16	42x18	42x18	42x18

**TABLE 4 – STANDARD UNIT TYPICAL PERFORMANCE**

**50-40** COOLING 1.714 GPM/TON WATER 54°F TO 40°F/0.00025 FF/TURBO-B TUBE #178

**85-95** 3 GPM/TON CONDENSER WATER ENTERING 85°F/0.00025 FF/TURBO-C TUBE #202

NOM. CAPACITY	TONS	2000	2250	2500	2750	3000	3500	4000	4500	5000
MODEL	—	s2000a	s2250a	s2500a	s2750a	s3000a	s3500a	s4000a	s4500a	s5000a
<b>EVAPORATOR</b>										
Flow	GPM	3430	3860	4285	4715	5140	6000	6860	7715	8570
Entering Temperature	°F	54	54	54	54	54	54	54	54	54
Leaving Temperature	°F	40	40	40	40	40	40	40	40	40
Fouling Factor	—	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Tube Velocity	FPS	4.6	5.2	5.0	4.6	4.5	5.0	5.1	4.7	5.1
Pressure Drop	Ft.	13.6	16.7	15.7	13.7	13.4	15.7	16.2	14.5	16.4
Tube Identification No.	—	178	178	178	178	178	178	178	178	178
Eliminators	Yes/No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
<b>CONDENSER</b>										
Flow	GPM	6000	6750	7500	8250	9000	10,500	12,000	13,500	15,000
Entering Temperature	°F	85	85	85	85	85	85	85	85	85
Leaving Temperature	°F	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3
Fouling Factor	—	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Tube Velocity	FPS	6.5	7.0	7.4	6.7	7.0	7.2	7.3	7.4	7.3
Pressure Drop	Ft.	23.4	26.4	29.2	24.2	26.2	28.2	29.1	30.3	29.8
Tube Identification No.	—	202	202	202	202	202	202	202	202	202
<b>REFRIGERANT</b>										
Charge	Lb.	5200	5762	6187	7145	7250	8008	9345	9863	10,484
<b>COMPRESSOR</b>										
Model		238A41D	238A72D	238A83D	238A84D	255B41D	255B72D	255B84D	255A62D	255A73D
FLSHP	HP	1505	1704	1896	2084	2257	2649	3038	3404	3796
RPM	—	5039	5046	5078	5121	4140	4180	4200	3510	3525
<b>MOTOR</b>										
Size/Nameplate HP	HP	1750	1750	2000	2250	2500	2750	3500	3500	4000
KW - w/o Liquid Injection	KW	1159	1313	1460	1605	1738	2040	2340	2622	2924
<b>UNIT POWER</b>										
	KW/Ton	0.580	0.583	0.584	0.584	0.579	0.583	0.585	0.583	0.585
<b>SOUND</b>										
Design	dBA	87	87	87	87	87	87	87	87	87
Typical Load (60% ±)	dBA	91	91	91	91	91	91	91	91	91
Minimum Load (Hot Gas)	dBA	94	94	94	94	94	94	94	94	94
<b>WEIGHT</b>										
Shipping	Lb.	102,246	105,465	113,199	128,554	154,762	164,996	185,317	201,064	219,929
Operating	Lb.	122,643	127,806	137,869	157,546	185,913	199,737	226,309	249,641	276,253
<b>PUMPOUT UNIT - Receiver Size</b>										
	Dia x L	36x16	36x16	36x16	42x16	42x16	42x16	42x18	42x18	42x18

