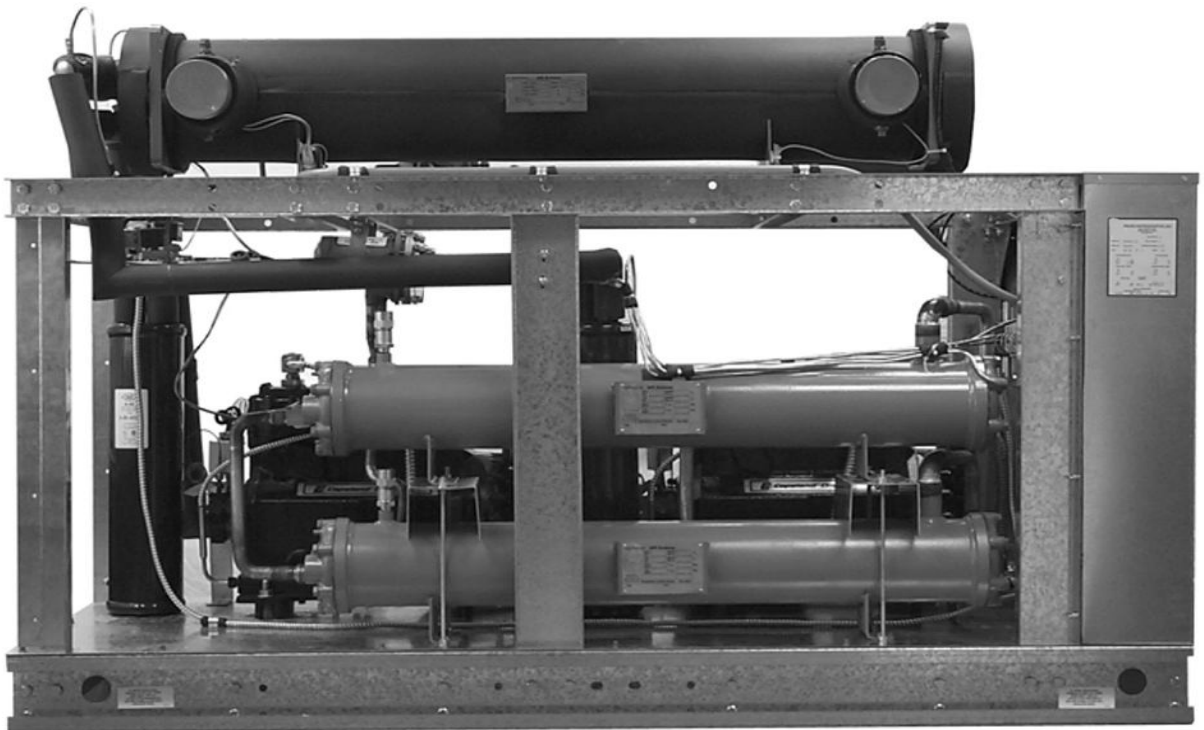




# SEMI-HERMETIC WATER COOLED CHILLERS

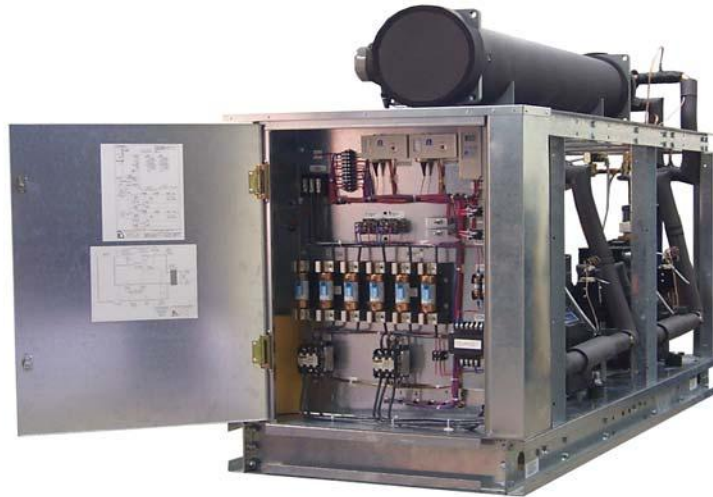


*PWC300D SHOWN*

1 to 106 Nominal Tons



## PWC SEMI-HERMETIC STANDARD FEATURES AND OPTIONS

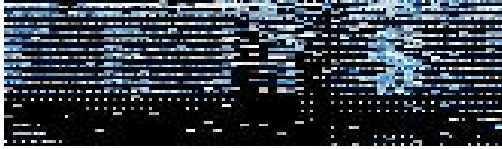


### STANDARD FEATURES

- **(1-12HP) 316 STAINLESS STEEL** (copper brazed) plate evaporator with 1/2" insulation, and secured in a steel bracket
- **(15-120HP) shell and tube chiller barrel**
- **Water flow switch**
- **Suction accumulator**
- **Compressor, condenser fan, and control circuit fusing**
- **LED 24V thermometers on water inlet / outlet**
- **Compressor vibration eliminators & spring isolator kit**
- **24V control transformer**
- **Removable / hinged control access panel**
- Semi-Hermetic compressor with crankcase heater
- Condenser(s): shell and tube
- On/Off switch for control circuit operation
- Manual compressor lead lag switch on dual circuit units
- Return fluid sensing thermostat with L.E.D. display
- High pressure refrigerant control
- Low pressure refrigerant control with time delay
- Liquid line drier, sightglass, solenoid, TEV
- Replaceable core liquid line drier (15 to 120hp )
- Compressor and condenser motor contactors
- Compressor time delay relay
- Compressor oil safety control
- Control circuit lock out relay
- Galvanized steel sheet metal base frame
- 1/2" insulation on all water and refrigerant suction lines
- **Complete refrigerant charge from factory**
- **Computerized factory run test under load conditions**

### AVAILABLE OPTIONS

- Compressor cylinder unloading 7.5HP & up
- Refrigerant suction / discharge gauge set
- Compressor run indicator
- Power on indicator
- Fault indicator with dry contacts
- High temp indicator with dry contacts
- Low water flow indicator with dry contacts
- Water temp freeze thermostat
- Fused disconnect
- Factory installed heat tape freeze protection thermostatically controlled
- Special piping for de-ionized and reverse osmosis water systems
- Fused **STAINLESS STEEL** system process pump
- Water flow meter
- Phase monitor
- CUNI (marine) condenser
- 4 year extended compressor warranty
- **Hot gas by-pass capacity control with solenoid valve & time delay relay**
- **Factory assisted start-up**



## NOMENCLATURE

Example: P WC L 301 S 2 - T3 - S

P P = Packaged ES = Evaporator Section CS = Condenser Section

WC WC = Water Cooled Condenser

L L = Low Temp. Model Blank = Standard Unit

301 Nominal HP Ex. 301 = 30HP, 010 = 1HP Etc.

S S = Single Circuit Unit D = Dual Circuit Unit

2 1 = R134a 2 = R22 6 = R404A, R507

T3 Electrical Requirement S2 = 208/230-1-60 S6 = 220-1-50  
T3 = 208/230-3-60 T7 = 200/208-3-50  
S4 = 460-1-60 T9 = 380-3-50  
T4 = 460-3-60  
T5 = 575-3-60

S Compressor Type S = Semi-Hermetic

Low ambient, or lower leaving water temperatures, can require the recirculation of glycol solutions or other fluid blends. These solutions can effect unit capacities. Please consult the factory on these or other special applications for proper sizing.



## SEMI-HERMETIC PWC CAPACITIES

### PACKAGED WATER COOLED CHILLER

Legacy Model	LWT °F	105°F Condensing		
		Tons	KW	EER

010S	42	1.1	1.2	11.3
	44	1.1	1.2	11.8
	45	1.2	1.2	12.0
	50	1.3	1.2	13.2

031S	42	2.8	3.4	9.9
	44	2.9	3.4	10.3
	45	3.0	3.5	10.4
	50	3.3	3.6	11.2

051S	42	5.5	4.7	14.2
	44	5.8	4.7	14.8
	45	6.0	4.7	15.2
	50	6.6	4.8	16.6

120S	42	12.3	11.7	12.7
	44	12.9	11.8	13.0
	45	13.2	11.9	13.3
	50	14.4	12.1	14.3

220S	42	19.2	16.5	13.9
	44	20.0	16.6	14.4
	45	20.4	16.7	14.7
	50	22.2	16.9	15.8

351S	42	33.7	29.4	13.7
	44	34.9	29.6	14.1
	45	35.7	29.8	14.3
	50	38.6	30.3	15.2

600S	42	52.5	50.8	12.3
	44	54.2	51.2	12.7
	45	55.4	51.5	12.9
	50	59.6	52.4	13.7

240D	42	25.4	23.6	12.8
	44	26.3	23.8	13.3
	45	26.9	23.9	13.5
	50	29.6	24.4	14.5

440D	42	39.8	33.2	14.3
	44	41.0	33.4	14.7
	45	42.1	33.5	15.1
	50	45.4	33.9	16.2

701D	42	65.9	58.6	13.4
	44	68.4	59.1	13.8
	45	69.8	59.4	14.1
	50	75.8	60.6	15.0

1200D	42	97.5	100.9	12.2
	44	106.3	102.0	12.5
	45	108.3	102.5	12.7
	50	117.5	104.4	13.5

Legacy Model	LWT °F	105°F Condensing		
		Tons	KW	EER

020S	42	1.6	1.7	11.4
	44	1.7	1.7	11.8
	45	1.7	1.7	12.0
	50	1.9	1.8	13.1

040S	42	3.9	4.3	11.0
	44	4.2	4.4	11.4
	45	4.3	4.4	11.6
	50	4.8	4.5	12.7

075S	42	9.4	8.1	14.0
	44	9.8	8.1	14.5
	45	10.0	8.1	14.8
	50	11.1	8.2	16.2

150S	42	15.2	13.1	13.9
	44	15.8	13.2	14.4
	45	16.0	13.2	14.6
	50	17.5	13.4	15.7

250S	42	21.3	18.2	13.9
	44	22.1	18.4	14.4
	45	22.5	18.4	14.6
	50	24.5	18.7	15.8

400S	42	37.1	32.7	13.6
	44	38.3	32.8	14.0
	45	39.2	33.1	14.3
	50	42.5	33.6	15.2

150D	42	19.0	16.2	14.1
	44	19.7	16.3	14.6
	45	20.1	16.3	14.8
	50	21.9	16.5	16.0

300D	42	30.0	26.1	13.8
	44	31.3	26.3	14.2
	45	31.9	26.4	14.5
	50	34.8	26.7	15.7

500D	42	43.1	36.5	14.2
	44	44.5	36.8	14.5
	45	45.5	36.9	14.8
	50	49.0	37.4	15.7

800D	42	73.6	65.2	13.5
	44	76.6	65.7	13.9
	45	77.8	66.0	14.2
	50	84.8	67.3	15.2

Legacy Model	LWT °F	105°F Condensing		
		Tons	KW	EER

030S	42	2.4	2.6	11.2
	44	2.5	2.6	11.7
	45	2.6	2.6	11.9
	50	2.8	2.6	12.9

050S	42	4.8	4.0	14.3
	44	5.0	4.0	14.8
	45	5.1	4.0	15.1
	50	5.7	4.2	16.7

100S	42	11.0	9.5	14.0
	44	11.5	9.5	14.5
	45	11.8	9.5	14.8
	50	12.9	9.6	16.2

200S	42	17.1	14.0	14.6
	44	17.9	14.2	15.1
	45	18.3	14.2	15.4
	50	20.0	14.5	16.7

301S	42	28.6	24.4	14.0
	44	29.6	24.5	14.5
	45	30.3	24.6	14.7
	50	33.0	25.0	15.8

500S	42	44.2	40.4	13.1
	44	45.6	40.7	13.4
	45	46.7	40.9	13.7
	50	50.0	41.5	14.4

200D	42	22.2	18.9	14.1
	44	23.1	19.0	14.6
	45	23.6	19.1	14.8
	50	25.7	19.3	16.0

400D	42	34.5	28.2	14.7
	44	35.7	28.3	15.1
	45	36.7	28.5	15.5
	50	39.7	28.9	16.5

601D	42	57.3	48.7	14.1
	44	59.0	49.0	14.4
	45	60.2	49.2	14.7
	50	64.8	49.9	15.6

1000D	42	88.8	80.8	13.2
	44	92.3	81.5	13.5
	45	94.2	81.9	13.8
	50	102.9	83.6	14.8

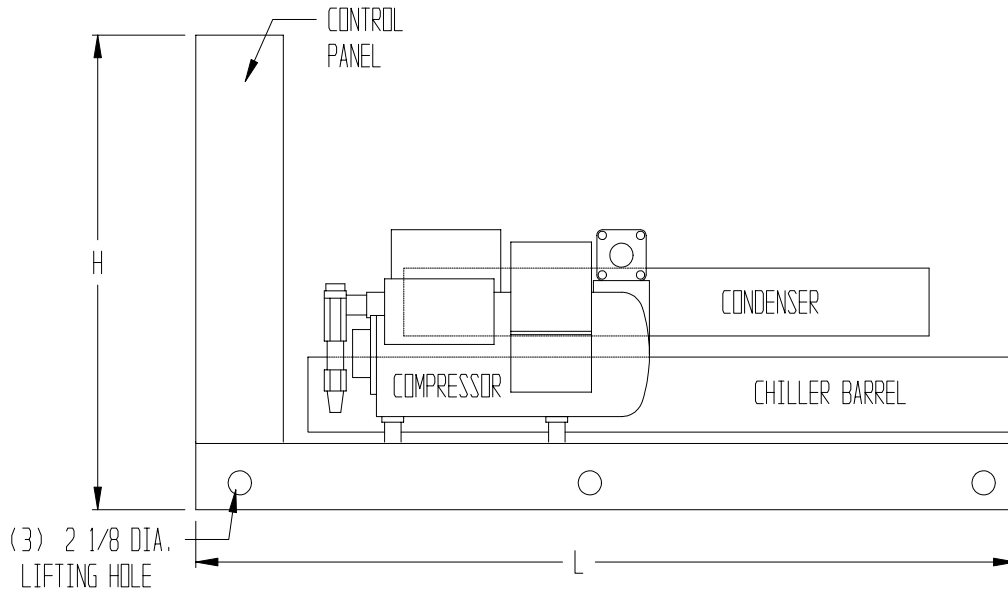
Capacities on this chart are based on refrigerant 22. Lower leaving water temperatures can require the use of glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

# Single Circuit Semi-Hermetic Water Cooled Chiller Specifications

Legacy Model	Nominal BTUH	Evaporator		Condenser		Length Inches	Width Inches	Height Inches	Compressor			RLA Ea.	LRA Ea.	MCA	Max Fuse	Weight Pounds																				
		PSI Drop	Conn.	PSI Drop	Conn.				Qty.	HP	Model																									
PWC010S2-S2-S	13,200	3.1	3/4" FPT	1.0	3/4" FPT	40	34	42	1	1	KAMA-0100	7.5	40	9.4	15	270																				
PWC010S2-T3-S												4.5	27	5.6																						
PWC010S2-T4-S												2.2	13.5	2.8																						
PWC020S2-S2-S	20,400	4.5	1" FPT	1.1	1" FPT					65	34	42	1	2	KAK-0200	7.3	40	9.1	15	310																
PWC020S2-T3-S																3.3	25	4.1																		
PWC020S2-T4-S																1.9	15	2.4																		
PWC030S2-S2-S	30,000	5.0	1" FPT	3.5	1" FPT									65	34	42	1	3	EAD-0320	16.0	102	20.0	30	325												
PWC030S2-T3-S																				12.4	85	15.5	25													
PWC030S2-T4-S																				5.2	42	6.5	15													
PWC031S2-S2-S	34,800	4.0	1" FPT	1.0	1" FPT													65	34	42	1	4	ERF-0310	17.0	86	21.3	35	385								
PWC031S2-T3-S																								11.7	82	14.6	25									
PWC031S2-T4-S																								6.4	41	8.0	15									
PWC040S2-S2-S	50,400	4.7	1" FPT	1.7	1" FPT	65	34	42	1													5	NRB-0400	32.9	131	41.1	70	440								
PWC040S2-T3-S																								21.8	141	27.3	45									
PWC040S2-T4-S																								11.3	62.5	14.1	25									
PWC050S2-S2-S	60,000	5.0	1" FPT	1.8	1" FPT					65	34	42	1									5	2DC-0500	29.9	125	37.4	60	600								
PWC050S2-T3-S																								22.3	120	27.9	50									
PWC050S2-T4-S																								10.4	60	13.0	20									
PWC051S2-T3-S	69,600	5.3	1" FPT	4.8	1" FPT									65	34	42	1					5	2DD-0500	22.3	120	27.9	50	600								
PWC051S2-T4S																								10.5	60	13.1	20									
PWC075S2-T3-S	117,600	5.3	1.25" FPT	3.2	1.25" FPT																	65	34	42	1	7.5	3DA-0750	41.0	215	51.3	90	680				
PWC075S2-T4-S																		20.0	106	25.0	45															
PWC100S2-T3-S	138,000	4.5	1.5" FPT	4.8	1.5" FPT													65	34	42	1					10	3DB-1000	43.6	215	54.5	90	890				
PWC100S2-T4-S																												20.0	106	25.0	45					
PWC120S2-T3-S	154,800	4.4	1.5" FPT	1.7	1.5" FPT	65	34	42	1																	12	3DF-1200	48.2	275	60.3	100	890				
PWC120S2-T4-S																												23.6	138	29.5	50					
PWC150S2-T3-S	189,600	5.5	3" MPT	6.4	3" MPT																					65	34	42	1	15	3DS-1500	59.6	275	74.5	125	1010
PWC150S2-T4S										29.0	138	36.3	60																							
PWC200S2-T3-S	214,800	5.4	3" MPT	4.9	3" MPT					65	34	42	1																	20	4DA-2000	66.0	308	82.5	125	1120
PWC200S2-T4-S																																33.0	154	41.3	70	
PWC220S2-T3-S	240,000	6.8	3" MPT	2.1	3" MPT									65	34	42	1													22	4DB-2200	65.6	374	82.0	125	1170
PWC220S2-T4-S																																32.8	187	41.0	70	
PWC250S2-T3-S	265,200	6.1	2.5" FPT	2.8	2" FPT																	65	34	42	1					25	4DH-2500	82.2	428	102.8	175	1300
PWC250S2-T4-S																																41.1	214	51.4	90	
PWC301S2-T3-S	355,200	6.6	3" MPT	4.9	3" MPT													65	34	42	1									30	6DB-3000	105.0	565	131.3	225	1300
PWC301S2-T4-S																																52.5	283	65.6	110	
PWC351S2-T3-S	418,800	2.5	3" MPT	2.4	3" MPT	65	34	42	1																					35	6DG-3500	125.0	594	156.3	250	1600
PWC351S2-T4-S																																62.5	297	78.1	125	
PWC400S2-T3-S	459,600	5.2	3" MPT	3.4	2.5" FPT																					65	34	42	1	40	6DJ-4000	142.0	594	177.5	300	1700
PWC400S2-T4-S																																71.0	297	88.8	150	
PWC500S2-T3-S	547,200	10.4	3" MPT	4.7	3" MPT					65	34	42	1																	50	8DP-5000	180.0	1070	225.0	400	1950
PWC500S2-T4-S																																90.0	535	112.5	200	
PWC600S2-T3-S	650,400	8.3	3" MPT	2.9	3" FPT									65	34	42	1													60	8DS-6000	224.0	1070	280.0	500	2160
PWC600S2-T4-S																																112.0	535	140.0	250	

Published nominal capacities based on ARI-590 standard, 54°F entering water, 44°F leaving water, 105°F condensing temperature.

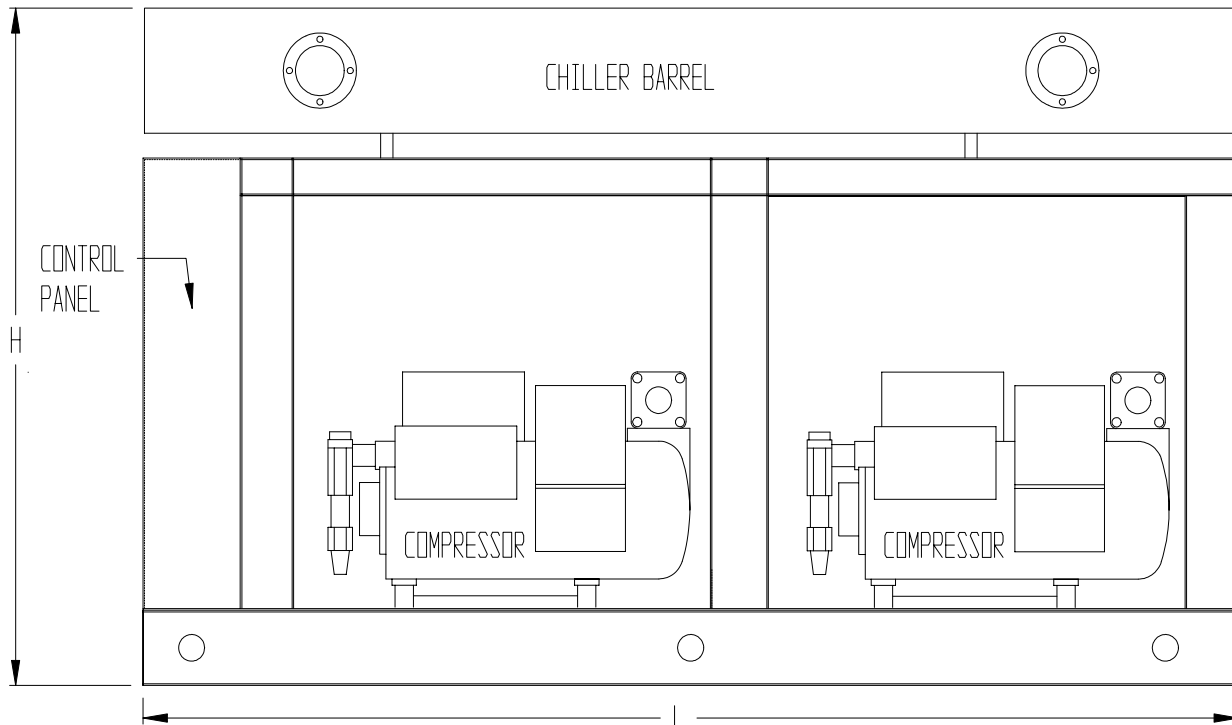
Published evaporator and condenser psi drop is based on a 10°F ΔT of water at nominal conditions.



# Dual Circuit Semi-Hermetic Water Cooled Chiller Specifications

Legacy Model	Nominal BTUH	Evaporator		Condenser (ea.)		Length Inches	Width Inches	Height Inches	Compressor			RLA Ea.	LRA Ea.	MCA	Max Fuse	Weight Pounds
		PSI Drop	Conn.	PSI Drop	Conn.				Qty.	HP	Model					
PWC150D2-T3-S PWC150D2-T4-S	236,400	6.6	2.5" FPT	3.2	1.25" FPT	85	42	2	7.5	3DA-0750	41.0	215	92.25	125	1260	
PWC200D2-T3-S PWC200D2-T4-S	277,200	6.6		4.8					10	3DB-1000	43.6	215	98.1	125	1380	
PWC240D2-T3-S PWC240D2-T4-S	315,600	5.3		1.7					12	3DF-1200	48.2	275	108.5	150	1480	
PWC300D2-T3-S PWC300D2-T4-S	375,600	7.3		2" MPT					6.4	15	3DS-1500	59.6	275	134.1	175	1820
PWC400D2-T3-S PWC400D2-T4-S	428,400	3.2	2.5" MPT	4.9	2" FPT	34	60	2	20	4DA-2000	66.0	308	148.5	200	1990	
PWC440D2-T3-S PWC440D2-T4-S	492,000	8.4		2.1					22	4DB-2200	65.6	374	147.6	200	2040	
PWC500D2-T3-S PWC500D2-T4-S	534,000	9.9	3" MPT	2.8	2" FPT	110	60	2	25	4DH-2500	82.2	428	185	250	2190	
PWC601D2-T3-S PWC601D2-T4-S	708,000	9.8		4.9					30	6DB-3000	105.0	565	236.3	300	2290	
PWC701D2-T3-S PWC701D2-T4-S	820,800	6	4" MPT	2.4	2.5" FPT	120	60	2	35	6DG-3500	125.0	594	281.3	400	2600	
PWC800D2-T3-S PWC800D2-T4-S	919,200	8.9	4" F	3.4					40	6DJ-4000	62.5	297	140.6	200	3000	
PWC1000D2-T3-S PWC1000D2-T4-S	1,107,600	6.4	5" F	4.7	3" FPT	120	60	2	50	8DP-5000	142.0	594	319.5	450	3490	
PWC1200D2-T3-S PWC1200D2-T4-S	1,275,600	8.4		2.9					60	8DS-6000	224.0	1070	504	700	3920	

Published nominal capacities based on ARI-590 standard, 54°F entering water, 44°F leaving water, 105°F condensing temperature.  
Published evaporator and condenser psi drop is based on a 10°F ΔT of water at nominal conditions.





## GLYCOL FACTOR TABLES

Percent Propylene Glycol by Weight	15%	20%	25%	30%	35%	40%	50%
Freezing Point In °F	24°	18°	15°	9°	5°	- 5°	- 30°
Capacity Factor Multiplier *	0.992	0.986	0.972	0.960	0.950	0.928	0.878
Pressure Drop Multiplier	1.04	1.08	1.13	1.21	1.26	1.47	2.79

Percent Ethylene Glycol by Weight	10%	15%	20%	25%	30%	35%	40%
Freezing Point In °F	25°	21°	17°	11°	5°	0°	-10°
Capacity Factor Multiplier *	0.98	0.96	0.95	0.93	0.92	0.91	0.89
Pressure Drop Multiplier	1.08	1.11	1.16	1.21	1.27	1.32	1.38

\* At standard ARI 590 conditions: 54°F entering fluid temperature, 44°F leaving

Due to manufacturer's policy of continuous product improvement, the manufacturer reserves the right to make changes without notice.

Along with the complete line of standard products that Legacy Chiller Systems Inc. offers, we also have the ability to custom build units to each customers particular needs. Please contact the factory or your Legacy representative for your special application