

CONSOLE WATER SOURCE HEAT PUMP (HPW) CERTIFIED DRAWING

DWG. NO. **SUBMITTAL TEMPLATE HPW**
REV. -

PROJECT	DATE	BY	REVISIONS			
PURCHASER	P.O. #	QTY	DATE	BY	DESCRIPTION	
ARCHITECT	SHIPPING DATES					
ENGINEER						
HVAC CONTR.						
GEN. CONTR.						

UNIT SPECIFICATIONS+

TYPICAL WATER SIDE DATA

TABLE 3

MODEL	5HPW09	5HPW13	8HPW09	8HPW13	8HPW16	8HPW19
FLOW RATE (GPM)	2.2	3.0	2.2	3.0	3.7	4.5
WATER CONNECTION SIZE (IN)	1/2 NPT					
CONDENSATE HOSE CONNECTION SIZE (IN)	5/8"					

ELECTRICAL DATA

TABLE 4

MODEL	VOLTAGE/HZ-PHASE	TOTAL UNIT FLA	MIN CIRCUIT AMPS	MAX FUSE/HACR
5HPW09	115/60-1	7.4	10.5	20
5HPW13	115/60-1	8.5	14.5	20
8HPW09	208-230/60-1	3.1	5.9	15
8HPW13	208-230/60-1	4.3	7.8	15
8HPW16	208-230/60-1	5.6	9.5	15
8HPW19	208-230/60-1	6.7	11.4	15

AIR FLOW CORRECTION TABLE

TABLE 5

	% OF RATED AIR FLOW	70%	75%	80%	85%	90%	95%	100%	105%
COOLING FACTORS	TOTAL CAPACITY	0.92	0.93	0.95	0.96	0.97	0.99	1.00	1.02
	SENSIBLE CAPACITY	0.80	0.83	0.87	0.90	0.93	0.97	1.00	1.04
	POWER	0.97	0.97	0.98	0.99	0.99	1.00	1.00	1.01
	HEAT REJECTION	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01
HEATING FACTORS	HEATING CAPACITY	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01
	POWER	1.08	1.06	1.05	1.04	1.02	1.01	1.00	0.99
	HEAT EXTRACTION	0.93	0.95	0.96	0.97	0.98	0.99	1.00	1.01

CONSOLE WATER SOURCE HEAT PUMP (HPW) CERTIFIED DRAWING

DWG. NO. **SUBMITTAL TEMPLATE HPW**
REV. -

PROJECT	DATE	BY	REVISIONS				
PURCHASER	P.O. #	QTY	DATE	BY	DESCRIPTION		
ARCHITECT	SHIPPING DATES						
ENGINEER							
HVAC CONTR.							
GEN. CONTR.							

UNIT SPECIFICATIONS+

AIR TEMPERATURE CORRECTION TABLE

TABLE 6

HEATING								
EAT DB (°F)	45	50	55	60	65	70	75	80
HEATING CAPACITY FACTOR	1.11	1.09	1.06	1.04	1.02	1.00	0.98	0.95
POWER FACTOR	0.77	0.81	0.86	0.91	0.95	1.00	1.05	1.10
HEAT EXTRACTION FACTOR	1.18	1.14	1.11	1.07	1.04	1.00	0.96	0.92

TABLE 7

COOLING						
EAT WB (°F)		60	65	67	70	75
TOTAL CAPACITY FACTOR		0.85	0.96	1.00	1.06	1.17
SENSIBLE CAPACITY FACTOR EAT DB	70	0.85	0.62	0.52	-	-
	75	1.09	0.86	0.76	0.62	-
	80	1.33	1.09	1.00	0.86	0.63
	85	*	1.33	1.23	1.09	0.85
	90	*	*	1.48	1.34	1.10
	95	*	*	*	1.56	1.32
POWER FACTOR		1.00	1.00	1.00	1.00	1.01
HEAT REJECTION FACTOR		0.90	0.97	1.00	1.05	1.12

DB - DRY BULB AIR TEMPERATURE
 WB - WET BULB AIR TEMPERATURE
 EAT - ENTERING AIR TEMPERATURE
 ALL TEMPERATURES ARE IN °F
 * = SENSIBLE CAPACITY EQUALS TOTAL CAPACITY

Ice-Air LLC Correction Chart

Performance Data

All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.

All capacities are in 1000 BTUh

All temperatures are in F

5HPW09.8HPW09

EWT		60			70			80			85			90			100			110		
GPM		1.1	1.6	2.2	1.1	1.6	2.2	1.1	1.6	2.2	1.1	1.6	2.2	1.1	1.6	2.2	1.1	1.6	2.2	1.1	1.6	2.2
Water dP (Ft)		2.9	5.6	9.7	2.6	5.2	9.2	2.6	5.0	8.4	2.5	5.0	8.2	2.4	5.0	7.9	2.4	4.8	7.6	2.4	4.8	7.6
Cooling	Total	10.7	10.8	10.8	10.3	10.6	10.7	9.7	10.0	10.3	9.2	9.7	10.0	8.9	9.3	9.7	7.9	8.4	8.8	6.6	7.3	7.6
	Sensible	8.1	8.0	8.0	8.1	8.1	8.1	8.0	8.1	8.1	7.9	8.0	8.0	7.6	7.9	8.0	7.2	7.5	7.6	6.4	6.8	7.1
	Power (KW)	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.9	0.8	0.8	0.9	0.8	1.0	0.9	0.9	1.1	1.1	1.0
	Heat Rejection	12.9	12.9	12.8	12.8	12.9	12.9	12.4	12.7	12.8	12.1	12.4	12.5	11.9	12.2	12.4	11.2	11.6	11.9	10.4	10.8	11.1
	EER	16.4	17.5	18.2	14.2	15.7	16.4	12.0	13.2	14.2	10.8	12.2	13.0	9.9	11.1	12.0	7.8	8.9	9.6	5.9	6.9	7.5
Heating	Total	10.7	11.1	11.4	11.8	12.2	12.5	12.7	13.2	13.5	13.2	13.6	13.9	13.6	14.0	14.2	Operation Not Recommended					
	Power (KW)	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9						
	Heat Extraction	8.0	8.5	8.7	9.0	9.4	9.7	9.8	10.3	10.6	10.3	10.7	10.9	10.7	11.0	11.2						
	COP	3.8	3.9	4.0	4.1	4.1	4.3	4.3	4.4	4.4	4.4	4.4	4.5	4.4	4.5	4.5						
5HPW13																						
EWT		60			70			80			85			90			100			110		
GPM		1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0
Water dP (Ft)		4.6	10.1	14.3	4.2	9.6	13.4	3.8	8.8	13.2	3.7	8.6	12.7	3.6	8.2	12.4	3.6	8.0	11.8	3.3	8.0	11.5
Cooling	Total	14.4	14.8	14.9	13.8	14.3	14.4	13.1	13.6	13.8	12.7	13.2	13.4	12.4	12.9	13.1	11.5	12.0	12.3	10.7	11.2	11.4
	Sensible	10.7	10.5	10.4	10.9	10.8	10.7	10.9	10.9	10.9	10.8	10.9	10.9	10.8	10.9	10.9	10.4	10.7	10.7	9.8	10.1	10.4
	Power (KW)	0.9	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.1	1.0	1.3	1.2	1.2	1.4	1.3	1.3
	Heat Rejection	17.4	17.5	17.6	17.1	17.3	17.4	16.8	17.0	17.1	16.5	16.8	16.9	16.3	16.5	16.8	15.9	16.2	16.3	15.6	15.8	15.9
	EER	16.8	18.2	18.9	14.7	16.0	16.8	12.5	13.9	14.5	11.7	12.8	13.5	10.8	11.9	12.5	9.1	10.1	10.6	7.6	8.4	8.9
Heating	Total	14.4	15.2	15.6	16.0	16.9	17.2	17.5	18.3	18.6	18.2	18.9	19.2	18.8	19.5	19.7	Operation Not Recommended					
	Power (KW)	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2						
	Heat Extraction	11.0	11.7	12.0	12.5	13.2	13.7	13.9	14.6	15.0	14.5	15.2	15.5	15.1	15.7	16.0						
	COP	3.8	4.0	4.0	4.2	4.3	4.4	4.4	4.6	4.7	4.6	4.7	4.8	4.7	4.8	4.9						
8HPW13																						
EWT		60			70			80			85			90			100			110		
GPM		1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0	1.5	2.3	3.0
Water dP (Ft)		4.6	10.1	14.3	4.2	9.6	13.4	3.8	8.8	13.2	3.7	8.6	12.7	3.6	8.2	12.4	3.6	8.0	11.8	3.3	8.0	11.5
Cooling	Total	14.4	14.8	14.9	13.8	14.3	14.4	13.1	13.6	13.8	12.7	13.2	13.4	12.4	12.9	13.1	11.5	12.0	12.3	10.7	11.2	11.4
	Sensible	10.7	10.5	10.4	10.9	10.8	10.7	10.9	10.9	10.9	10.8	10.9	10.9	10.8	10.9	10.9	10.4	10.7	10.7	9.8	10.1	10.4
	Power (KW)	0.9	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.1	1.0	1.3	1.2	1.2	1.4	1.3	1.3
	Heat Rejection	17.4	17.5	17.6	17.1	17.3	17.4	16.8	17.0	17.1	16.5	16.8	16.9	16.3	16.5	16.8	15.9	16.2	16.3	15.6	15.8	15.9
	EER	16.8	18.2	18.9	14.7	16.0	16.8	12.5	13.9	14.5	11.7	12.8	13.5	10.8	11.9	12.5	9.1	10.1	10.6	7.6	8.4	8.9
Heating	Total	14.4	15.2	15.6	16.0	16.9	17.2	17.5	18.3	18.6	18.2	18.9	19.2	18.8	19.5	19.7	Operation Not Recommended					
	Power (KW)	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2						
	Heat Extraction	11.0	11.7	12.0	12.5	13.2	13.7	13.9	14.6	15.0	14.5	15.2	15.5	15.1	15.7	16.0						
	COP	3.8	4.0	4.0	4.2	4.3	4.4	4.4	4.6	4.7	4.6	4.7	4.8	4.7	4.8	4.9						
8HPW16																						
EWT		60			70			80			85			90			100			110		
GPM		1.9	2.8	3.7	1.9	2.8	3.7	1.9	2.8	3.7	1.9	2.8	3.7	1.9	2.8	3.7	1.9	2.8	3.7	1.9	2.8	3.7
Water dP (Ft)		2.5	5.7	9.5	2.5	5.4	8.9	2.5	4.9	8.4	2.3	4.7	8.1	2.1	4.6	7.8	2.1	4.3	7.6	2.1	4.3	7.3
Cooling	Total	18.6	19.2	19.4	17.6	18.3	18.6	16.4	17.1	17.6	15.7	16.5	16.8	15.1	15.8	16.3	13.7	14.5	14.9	12.4	13.1	13.5
	Sensible	13.2	13.3	13.5	12.8	13.1	13.2	12.3	12.6	12.8	12.1	12.3	12.5	11.7	12.1	12.3	11.2	11.5	11.7	10.8	11.0	11.1
	Power (KW)	1.0	0.9	0.9	1.1	1.0	1.0	1.2	1.2	1.2	1.1	1.3	1.2	1.2	1.4	1.3	1.3	1.5	1.4	1.4	1.7	1.6
	Heat Rejection	22.1	22.5	22.6	21.5	22.0	22.1	20.8	21.3	21.5	20.4	20.8	21.1	19.9	20.5	20.7	19.1	19.5	19.9	18.4	18.7	19.0
	EER	18.5	20.7	21.8	15.7	17.6	18.5	13.2	14.7	15.6	12.0	13.4	14.2	11.0	12.2	13.0	9.0	10.1	10.7	7.4	8.3	8.7
Heating	Total	15.5	16.3	16.7	17.2	18.2	18.6	18.9	19.8	20.2	19.6	20.5	20.9	20.4	21.2	21.6	Operation Not Recommended					
	Power (KW)	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3						
	Heat Extraction	11.9	12.6	13.1	13.6	14.4	14.8	15.1	15.9	16.4	15.8	16.6	17.0	16.5	17.3	17.6						
	COP	3.8	3.9	4.0	4.1	4.3	4.4	4.4	4.6	4.7	4.5	4.7	4.8	4.7	4.8	4.9						
8HPW19																						
EWT		60			70			80			85			90			100			110		
GPM		2.3	3.4	4.5	2.3	3.4	4.5	2.3	3.4	4.5	2.3	3.4	4.5	2.3	3.4	4.5	2.3	3.4	4.5	2.3	3.4	4.5
Water dP (Ft)		4.5	10.1	15.7	4.3	9.6	14.6	3.9	9.0	14.2	3.8	8.7	13.8	3.7	8.4	13.5	3.7	8.2	12.9	3.4	7.9	12.7
Cooling	Total	22.4	23.1	23.3	21.0	21.8	22.2	19.4	20.4	20.7	18.7	19.5	20.0	17.8	18.7	19.2	16.5	17.2	17.6	15.6	16.0	16.2
	Sensible	16.2	16.3	16.5	15.6	16.0	16.2	14.8	15.4	15.5	14.3	14.9	15.1	13.8	14.4	14.6	12.8	13.3	13.5	12.0	12.3	12.6
	Power (KW)	1.1	1.1	1.0	1.3	1.2	1.2	1.4	1.3	1.3	1.5	1.4	1.4	1.4	1.6	1.5	1.7	1.7	1.6	1.9	1.8	1.8
	Heat Rejection	26.6	27.0	27.1	25.7	26.2	26.5	24.6	25.3	25.6	24.2	24.8	25.1	23.7	24.2	24.5	22.9	23.3	23.4	22.6	22.7	22.8
	EER	19.6	21.7	22.6	16.4	18.2	19.2	13.7	15.2	16.1	12.5	13.8	14.6	11.3	12.5	13.2	9.5	10.4	10.9	8.3	8.8	9.2
Heating	Total	20.7	21.1	21.2	22.0	22.5	22.8	23.9	24.9	25.4	25.3	26.6	27.4	26.8	28.4	29.3	Operation Not Recommended					
	Power (KW)	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.6						
	Heat Extraction	15.7	16.0	16.2	16.9	17.3	17.7	18.7	19.5	20.1	20.1	21.2	21.9	21.3	22.8	23.7						
	COP	4.3	4.3	4.3	4.5	4.5	4.6	4.8	4.9	4.9	4.9	5.1	5.2	5.1	5.3	5.4						