



# GUIDE SPECIFICATIONS

## WP Series Water-to-Water Reverse Cycle Chillers & Low Temp Boilers

### WP036-072 Reverse Cycle Chillers / Low Temperature Boilers

#### GENERAL

Units shall be Underwriter Laboratories (UL) listed for safety on all models. Each unit shall be run tested at the factory. Each unit shall be pallet mounted and stretch wrapped.

The units shall be warranted by the manufacturer against defects in materials and workmanship for a period of one year on all parts, and 5 years on the compressor. The units shall be manufactured in an ISO 9001:2000 certified facility.

The units shall be designed to operate with entering fluid temperatures between 20°F (-7°C) and 120°F (49°C) as manufactured by FHP Manufacturing in Fort Lauderdale, Florida. Refrigerant shall be R-22

#### CASING & CABINET

The cabinet shall be fabricated from heavy-gauge steel finished with Galvalume® plus, an aluminum-zinc alloy with a clear acrylic coating for additional corrosion protection. The interior shall be insulated with ½" (12.7mm) thick, multi density, coated, glass fiber. All units shall allow sufficient service access to replace the compressor without unit removal.

#### REFRIGERATION CIRCUITS

All units shall contain a sealed refrigerant circuit including a hermetic scroll compressor, bidirectional thermal expansion valve metering device, coaxial style fluid-to-refrigerant heat exchangers, refrigerant reversing valve and service ports. Compressor shall be high efficiency, designed for heat pump duty with refrigerant R-22, and mounted on rubber vibration isolators. Compressor motors shall be equipped with overload protection. Refrigerant reversing valves shall be pilot operated sliding piston type with replaceable encapsulated magnetic coils energized only during the chiller cycle. The coaxial water-to-refrigerant heat exchanger shall be constructed of a convoluted copper (optional cupronickel) inner tube and steel outer tube with a designed refrigerant working pressure of 450 PSIG (3100 kPa) and a designed water side working pressure of no less than 400 PSIG (2750 kPa). Due to their susceptibility to fouling, brazed plate heat exchangers are not acceptable. The fluid-to-refrigerant heat exchangers shall be insulated to prevent condensation at low fluid temperatures.

#### ELECTRICAL

Controls and safety devices will be factory wired and mounted within the unit. Controls shall include, compressor contactor, 24V transformer, reversing valve coil and solid state lockout controller (UPM) The UPM controller shall include the following features: Anti-short cycle time delay, random start, brown out/surge/power interruption protection, 120 second low pressure switch bypass timer, shutdown on high or low refrigerant pressure safety switch inputs, shutdown for the optional freezestat, 24 VAC alarm output for remote fault indication, unit reset at thermostat or disconnect, ability to defeat time delays for servicing and automatic intelligent reset. The UPM shall automatically reset after a safety shut down and restart the unit, if the cause of the shut down no longer exists, after the anti-short cycle and random start timers expire. Should a fault re-occur within 60 minutes after reset, then a permanent lockout will occur. A light emitting diode (LED) shall annunciate the following alarms: high refrigerant pressure, low refrigerant pressure and low water temperature (when equipped with the optional low water temperature sensor). The LED will display each fault condition as soon as the fault occurs. If a permanent lockout occurs, then the fault LED will display the type of fault until the unit is reset.

Safety devices include a low pressure cutout set a 20 PSIG (140 kPa) for loss of charge protection (freezestat and/or high discharge gas temperature sensor is not acceptable) and a high pressure cutout control set at 400 PSIG (2750 kPa). An optional energy management relay that allows unit control by an external source shall be factory installed. A terminal block with screw terminals shall be provided for control wiring.

#### PIPING

Water piping connections shall be female pipe thread with a single set of source and load connections flush mounted to the unit cabinet.



# GUIDE SPECIFICATIONS

## WP Series Water-to-Water Reverse Cycle Chillers & Low Temp Boilers

### WP120 - 420 Modular Reverse Cycle Chillers/Low Temperature Boilers

#### GENERAL

Units shall be Underwriter Laboratories (UL) listed for safety on all models. Each unit shall be run tested at the factory. Each unit shall be pallet mounted and stretch wrapped.

The units shall be warranted by the manufacturer against defects in materials and workmanship for a period of one year on all parts, and 5 years on the compressor. The units shall be manufactured in an ISO 9001:2000 certified facility.

The units shall be designed to operate with entering fluid temperatures between 20°F (-7°C) and 120°F (49°C) as manufactured by FHP Manufacturing in Fort Lauderdale, Florida. Refrigerant shall be R-22.

#### CASING & CABINET

The cabinet shall be fabricated from heavy-gauge galvanized steel and shall be supported by a full angle iron frame. The interior shall be insulated with ½" (12.7mm) thick, multi density, coated, glass fiber. All units shall allow front service access to replace the compressor and/or electrical components without unit removal.

#### REFRIGERATION CIRCUITS

All units shall contain a sealed refrigerant circuit including hermetic scroll compressor(s), bidirectional thermal expansion valve metering device(s), coaxial style fluid-to-refrigerant heat exchangers, refrigerant reversing valve(s) and service ports. Compressor shall be high efficiency, designed for heat pump duty with refrigerant R-22, and mounted on rubber vibration isolators. Compressor motors shall be equipped with overload protection. Refrigerant reversing valves shall be pilot operated sliding piston type with replaceable encapsulated magnetic coils energized only during the chiller cycle. The coaxial water-to-refrigerant heat exchanger shall be constructed of a convoluted copper (optional cupronickel) inner tube and steel outer tube with a designed refrigerant working pressure of 450 PSIG (3100 kPa) and a designed water side working pressure of no less than 400 PSIG (2750 kPa). Due to their susceptibility to fouling, brazed plate heat exchangers are not acceptable. The fluid-to-refrigerant heat exchangers shall be insulated to prevent condensation at low fluid temperatures.

#### ELECTRICAL

Controls and safety devices will be factory wired and mounted within the unit. Controls shall include compressor contactors, 24V transformer, reversing valve coils and a solid state lock-out control circuit (UPM). The UPM controller shall include the following features: Anti-short cycle time delay, random start, interstage delay, brown out/surge/power interruption protection, 120 second low pressure switch bypass timer, shutdown on high or low refrigerant pressure safety switch inputs, shutdown for the optional freezestat, 24 VAC alarm output for remote fault indication, unit reset at thermostat or disconnect, ability to defeat time delays for servicing, time delay between stages and automatic intelligent reset. The UPM shall automatically reset after a safety shut down and restart the unit, if the cause of the shut down no longer exists, after the anti-short cycle and random start timers expire. Should a fault re-occur within 60 minutes after reset, then a permanent lockout will occur. A light emitting diode (LED) shall annunciate the following alarms for each refrigerant circuit: high refrigerant pressure, low refrigerant pressure and low water temperature (when equipped with the optional low water temperature sensor). The LED will display each fault condition as soon as the fault occurs. If a permanent lockout occurs, then the fault LED will display the type of fault until the unit is reset. Safety devices include a low pressure cutout set at 20 PSIG (140 kPa) for loss of charge protection (a freezestat used for loss of charge protection is not acceptable) and a high pressure cutout control set at 400 PSIG (2750 kPa). An optional energy management relay to allow unit control by an external source shall be factory installed.

#### PIPING

Water piping connections shall be female pipe thread with a single set of source and load connections per unit.



FHP Manufacturing Co.  
 601 N.W. 65th Court  
 Fort Lauderdale, FL 33309  
 Phone: (954) 776-5471  
 Fax: (800) 776-5529  
<http://www.fhp-mfg.com>

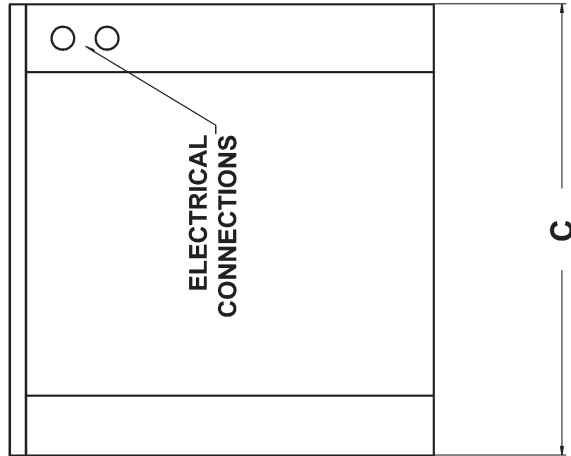
# WP036-072 Series Reverse Cycle Chillers

MODEL	Dimensions										Water Conn.	
	A Height	B Width	C Depth	D	E	F	G	H	J	K		L
WP036	24.25	32.50	24.00	2.50	2.00	14.88	2.25	2.50	8.25	14.88	2.25	0.75FPT
WP060	24.25	32.50	24.00	3.00	2.50	17.00	2.50	4.00	3.38	18.00	3.38	1.00FPT
WP072	24.25	32.50	24.00	3.38	2.50	22.75	4.38	3.38	4.38	22.75	2.50	1.00FPT

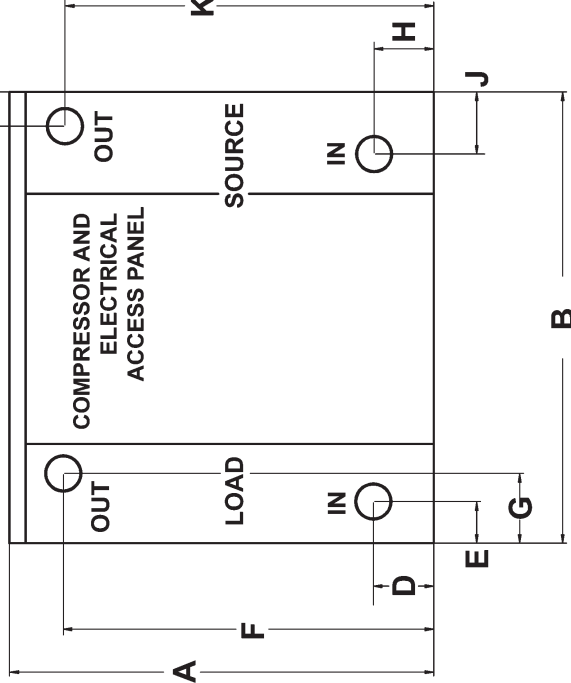


NOTES: All dimensions within +/- 0.125".  
 Specifications subject to change without notice.

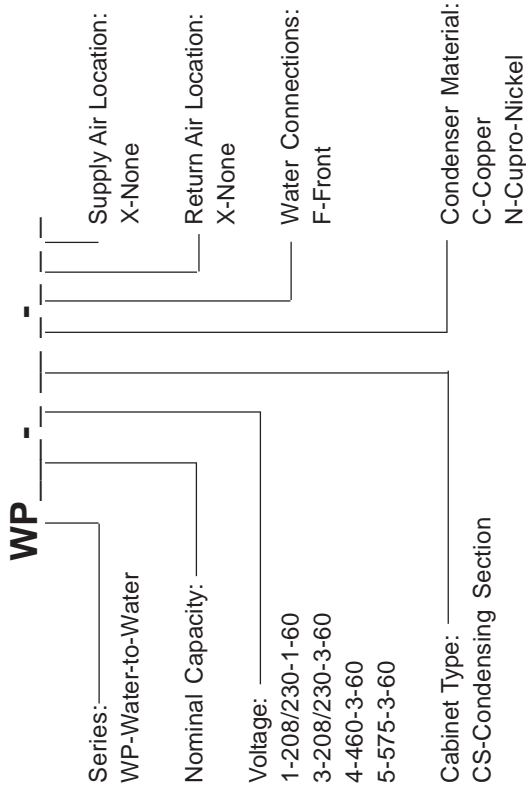
## LEFT SIDE



## UNIT FRONT



## WP Series Reverse Cycle Chiller Nomenclature





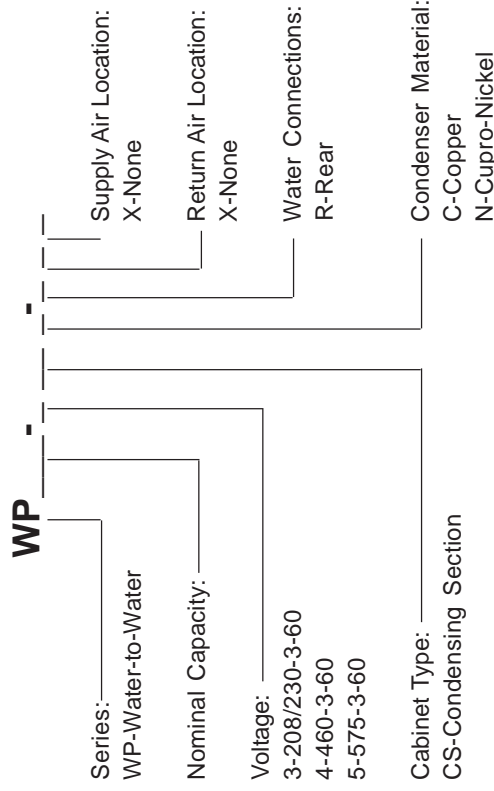
FHP Manufacturing Co.  
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# WP120-420 Series Reverse Cycle Chillers

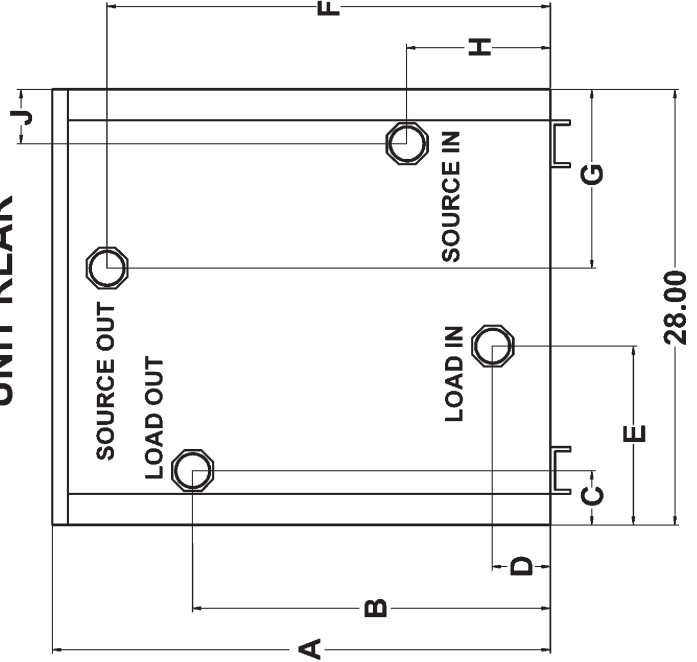
MODEL	Dimensions									
	A Height	B	C	D	E	F	G	H	J	Water Conn.
WP120	32.00	23.00	8.50	3.75	10.50	28.50	10.50	9.25	9.00	1.25 FPT
WP180	32.00	23.00	4.50	3.75	10.50	28.50	10.50	9.25	5.00	1.50 FPT
WP210	32.00	23.00	4.50	3.75	10.50	28.50	10.50	9.25	5.00	1.50 FPT
WP240	64.00	39.00	8.50	19.75	10.50	44.50	10.50	25.25	9.00	2.00 FPT
WP360	64.00	39.00	4.50	19.75	10.50	44.50	10.50	25.25	5.00	2.00 FPT
WP420	64.00	39.00	4.50	19.75	10.50	44.50	10.50	25.25	5.00	2.00 FPT

NOTES: All units are 46.00 in depth.  
 All dimensions within +/- 0.125".  
 Specifications subject to change without notice.

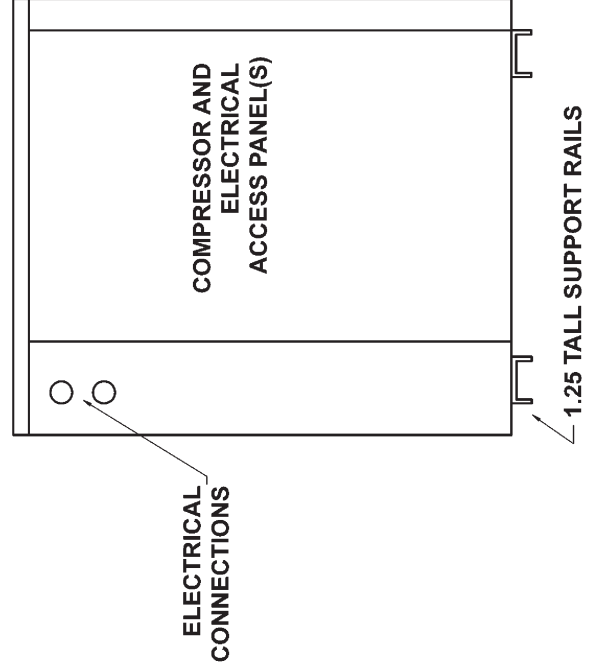
## WP Series Reverse Cycle Chiller Nomenclature



### UNIT REAR



### UNIT FRONT





WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WPO36**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-1-60	-1	18.9	96	23.6	40
208/230-3-60	-3	12.2	75	15.3	25
460-3-60	-4	6.2	40	7.8	15

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
4	2.8	4	2.7
5	5.9	5	5.6
7	9.9	7	9.3
9	14.8	9	14.0
11	20.6	11	19.4

**UNIT WEIGHT**

Unit Weight (lbs) 250  
 Shipping Weight (lbs) 270



**CHILLER PERFORMANCE**

Based on 7 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	2.66	31,965	2,251	14.2	39,645
	80°	2.56	30,717	2,330	13.2	38,667
	85°	2.45	29,456	2,403	12.3	37,654
	90°	2.35	28,184	2,469	11.4	36,609
	95°	2.24	26,906	2,529	10.6	35,536
42°	75°	2.78	33,410	2,277	14.7	41,177
	80°	2.68	32,120	2,360	13.6	40,174
	85°	2.57	30,817	2,438	12.6	39,135
	90°	2.46	29,505	2,509	11.8	38,066
	95°	2.35	28,187	2,574	11.0	36,969
44°	75°	2.91	34,899	2,300	15.2	42,749
	80°	2.80	33,565	2,389	14.1	41,717
	85°	2.68	32,219	2,471	13.0	40,651
	90°	2.57	30,864	2,548	12.1	39,556
	95°	2.46	29,504	2,617	11.3	38,434
45°	75°	2.97	35,669	2,311	15.4	43,555
	80°	2.86	34,312	2,402	14.3	42,509
	85°	2.75	32,943	2,487	13.3	41,429
	90°	2.63	31,566	2,566	12.3	40,320
	95°	2.51	30,167	2,639	11.4	39,171
46°	75°	3.04	36,450	2,322	15.7	44,371
	80°	2.92	35,054	2,416	14.5	43,298
	85°	2.81	33,662	2,503	13.5	42,203
	90°	2.69	32,262	2,584	12.5	41,080
	95°	2.57	30,858	2,659	11.6	39,931
48°	75°	3.17	38,032	2,342	16.2	46,023
	80°	3.05	36,603	2,440	15.0	44,930
	85°	2.93	35,148	2,533	13.9	43,792
	90°	2.81	33,701	2,619	12.9	42,638
	95°	2.69	32,250	2,699	12.0	41,460
50°	75°	3.31	39,663	2,361	16.8	47,717
	80°	3.18	38,183	2,464	15.5	46,589
	85°	3.06	36,693	2,561	14.3	45,431
	90°	2.93	35,181	2,653	13.3	44,232
	95°	2.81	33,682	2,738	12.3	43,022

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 7 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input (Watts)	COP	Heat of Absorb. (BtuH)
100°	35°	29,085	2,219	3.8	21,513
	40°	31,872	2,321	4.0	23,953
	50°	37,802	2,502	4.4	29,266
	60°	44,205	2,651	4.9	35,158
	70°	51,090	2,767	5.4	41,649
110°	35°	27,432	2,296	3.5	19,599
	40°	30,205	2,417	3.7	21,958
	50°	36,035	2,640	4.0	27,027
	60°	42,308	2,831	4.4	32,649
	70°	49,024	2,988	4.8	38,829
120°	35°	25,686	2,350	3.2	17,667
	40°	28,418	2,494	3.3	19,910
	50°	34,177	2,759	3.6	24,765
	60°	40,311	2,993	3.9	30,098
	70°	46,859	3,193	4.3	35,963
125°	35°	24,772	2,370	3.1	16,685
	40°	27,508	2,524	3.2	18,897
	50°	33,210	2,811	3.5	23,618
	60°	39,282	3,068	3.8	28,813
	70°	45,747	3,291	4.1	34,519
130°	35°	23,839	2,385	2.9	15,703
	40°	26,565	2,549	3.1	17,866
	50°	32,227	2,860	3.3	22,470
	60°	38,236	3,139	3.6	27,526
	70°	44,606	3,385	3.9	33,056

Units are complete packages featuring 1 stage operation and containing refrigeration compressor, reversing valve, expansion valve metering device and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressor, high and low refrigerant pressure switches and a lock-out control circuit.

**FHP MANUFACTURING**

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WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP060**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-1-60	-1	25.1	169	31.4	50
208/230-3-60	-3	17.7	123	22.1	40
460-3-60	-4	8.1	49.5	10.1	15

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
6	2.3	6	2.2
9	4.7	9	4.5
12	8.0	12	7.5
18	16.5	18	15.6
20	20.0	20	18.8

**UNIT WEIGHT**

Unit Weight (lbs) 310  
 Shipping Weight (lbs) 330



**CHILLER PERFORMANCE**

Based on 12 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	3.76	45,168	3,177	14.2	56,007
	80°	3.70	44,416	3,370	13.2	55,916
	85°	3.63	43,612	3,578	12.2	55,822
	90°	3.56	42,746	3,804	11.2	55,727
	95°	3.49	41,831	4,047	10.3	55,638
42°	75°	3.90	46,849	3,180	14.7	57,698
	80°	3.84	46,075	3,373	13.7	57,583
	85°	3.77	45,249	3,580	12.6	57,463
	90°	3.70	44,369	3,802	11.7	57,342
	95°	3.62	43,425	4,045	10.7	57,225
44°	75°	4.05	48,577	3,181	15.3	59,432
	80°	3.98	47,774	3,376	14.2	59,292
	85°	3.91	46,927	3,581	13.1	59,146
	90°	3.84	46,025	3,802	12.1	58,999
	95°	3.76	45,067	4,041	11.2	58,855
45°	75°	4.12	49,449	3,184	15.5	60,314
	80°	4.05	48,643	3,376	14.4	60,162
	85°	3.98	47,784	3,581	13.3	60,004
	90°	3.91	46,864	3,804	12.3	59,842
	95°	3.82	45,895	4,042	11.4	59,685
46°	75°	4.19	50,339	3,185	15.8	61,207
	80°	4.13	49,521	3,377	14.7	61,044
	85°	4.05	48,652	3,582	13.6	60,873
	90°	3.98	47,721	3,803	12.5	60,698
	95°	3.90	46,741	4,040	11.6	60,526
48°	75°	4.35	52,148	3,188	16.4	63,025
	80°	4.28	51,301	3,381	15.2	62,836
	85°	4.20	50,410	3,585	14.1	62,640
	90°	4.12	49,465	3,803	13.0	62,440
	95°	4.04	48,455	4,040	12.0	62,239
50°	75°	4.50	53,992	3,193	16.9	64,885
	80°	4.43	53,130	3,383	15.7	64,674
	85°	4.35	52,216	3,586	14.6	64,452
	90°	4.27	51,242	3,805	13.5	64,224
	95°	4.18	50,219	4,038	12.4	63,997

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 12 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input (Watts)	COP	Heat of Absorb. (BtuH)
100°	35°	47,724	3,812	3.7	34,718
	40°	50,896	3,808	3.9	37,904
	50°	57,779	3,802	4.5	44,806
	60°	65,378	3,805	5.0	52,395
	70°	73,690	3,817	5.7	60,665
110°	35°	48,028	4,340	3.2	33,220
	40°	51,094	4,326	3.5	36,332
	50°	57,768	4,302	3.9	43,089
	60°	65,167	4,290	4.5	50,529
	70°	73,287	4,287	5.0	58,659
120°	35°	48,428	4,962	2.9	31,498
	40°	51,377	4,935	3.1	34,539
	50°	57,825	4,888	3.5	41,147
	60°	65,004	4,852	3.9	48,448
	70°	72,914	4,827	4.4	56,442
125°	35°	48,674	5,312	2.7	30,551
	40°	51,563	5,280	2.9	33,546
	50°	57,890	5,218	3.3	40,086
	60°	64,952	5,168	3.7	47,319
	70°	72,748	5,132	4.2	55,239
130°	35°	48,960	5,695	2.5	29,529
	40°	51,782	5,651	2.7	32,500
	50°	57,985	5,575	3.0	38,962
	60°	64,926	5,509	3.5	46,129
	70°	72,604	5,457	3.9	53,984

Units are complete packages featuring 1 stage operation and containing refrigeration compressor, reversing valve, expansion valve metering device and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressor, high and low refrigerant pressure switches and a lock-out control circuit.

**FHP MANUFACTURING**

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WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP072**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-1-60	-1	28.8	169	36.0	60
208/230-3-60	-3	19.1	137	23.9	40
460-3-60	-4	9.1	62	11.4	20
575-3-60	-5	7.2	50	9.0	15

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
7	2.7	7	2.5
11	5.6	11	5.2
14	9.3	14	8.8
17	12.9	17	12.2
21	19.3	21	18.2

**UNIT WEIGHT**

Unit Weight (lbs) 430  
 Shipping Weight (lbs) 450



**CHILLER PERFORMANCE**

Based on 14 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	4.55	54,612	3,649	15.0	67,063
	80°	4.46	53,492	3,868	13.8	66,690
	85°	4.36	52,324	4,101	12.8	66,315
	90°	4.26	51,080	4,352	11.7	65,927
	95°	4.15	49,760	4,621	10.8	65,526
42°	75°	4.71	56,524	3,652	15.5	68,985
	80°	4.61	55,376	3,870	14.3	68,580
	85°	4.51	54,172	4,103	13.2	68,171
	90°	4.41	52,904	4,353	12.2	67,755
	95°	4.30	51,571	4,619	11.2	67,331
44°	75°	4.87	58,484	3,656	16.0	70,957
	80°	4.78	57,306	3,872	14.8	70,518
	85°	4.67	56,074	4,104	13.7	70,077
	90°	4.56	54,780	4,353	12.6	69,631
	95°	4.45	53,413	4,619	11.6	69,175
45°	75°	4.96	59,483	3,657	16.3	71,962
	80°	4.86	58,289	3,873	15.0	71,505
	85°	4.75	57,043	4,105	13.9	71,047
	90°	4.64	55,734	4,353	12.8	70,585
	95°	4.53	54,355	4,619	11.8	70,115
46°	75°	5.04	60,494	3,659	16.5	72,980
	80°	4.94	59,284	3,875	15.3	72,505
	85°	4.84	58,022	4,105	14.1	72,030
	90°	4.72	56,700	4,353	13.0	71,552
	95°	4.61	55,307	4,619	12.0	71,066
48°	75°	5.21	62,555	3,663	17.1	75,055
	80°	5.11	61,311	3,878	15.8	74,542
	85°	5.00	60,017	4,107	14.6	74,031
	90°	4.89	58,664	4,354	13.5	73,520
	95°	4.77	57,243	4,619	12.4	73,002
50°	75°	5.39	64,669	3,668	17.6	77,183
	80°	5.28	63,388	3,881	16.3	76,631
	85°	5.17	62,060	4,110	15.1	76,083
	90°	5.06	60,675	4,355	13.9	75,536
	95°	4.94	59,224	4,619	12.8	74,985

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 14 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input (Watts)	COP	Heat of Absorb. (BtuH)
100°	35°	56,626	4,359	3.8	41,752
	40°	60,280	4,354	4.1	45,422
	50°	68,118	4,352	4.6	53,268
	60°	76,728	4,357	5.2	61,862
	70°	86,182	4,367	5.8	71,284
110°	35°	56,285	4,932	3.3	39,458
	40°	59,877	4,920	3.6	43,089
	50°	67,555	4,907	4.0	50,812
	60°	75,958	4,903	4.5	59,228
	70°	85,156	4,909	5.1	68,407
120°	35°	55,849	5,588	2.9	36,782
	40°	59,394	5,571	3.1	40,387
	50°	66,941	5,547	3.5	48,016
	60°	75,162	5,537	4.0	56,270
	70°	84,136	5,537	4.5	65,242
125°	35°	55,587	5,954	2.7	35,272
	40°	59,114	5,933	2.9	38,871
	50°	66,606	5,903	3.3	46,464
	60°	74,749	5,890	3.7	54,652
	70°	83,620	5,888	4.2	63,531
130°	35°	55,294	6,341	2.6	33,658
	40°	58,807	6,317	2.7	37,252
	50°	66,253	6,283	3.1	44,815
	60°	74,324	6,266	3.5	52,943
	70°	83,098	6,264	3.9	61,724

Units are complete packages featuring 1 stage operation and containing refrigeration compressor, reversing valve, expansion valve metering device and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressor, high and low refrigerant pressure switches and a lock-out control circuit.

**FHP MANUFACTURING**

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WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP120**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-3-60	-3	37.8	239	47.3	80
460-3-60	-4	17.2	125	21.5	35
575-3-60	-5	12.4	80	15.5	25

**FLUID FLOW & PRESSURE DROP**

Chilled Water Side (@ 55°F)		Cond. Water Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
12	2.5	12	2.4
18	5.2	18	4.9
24	8.7	24	8.2
30	13.0	30	12.2
36	18.1	36	17.0

**UNIT WEIGHT**

Unit Weight (lbs) 500  
 Shipping Weight (lbs) 520



**CHILLER PERFORMANCE**

Based on 24 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	8.80	105,641	7,421	14.2	130,960
	80°	8.62	103,480	7,801	13.3	130,095
	85°	8.44	101,234	8,208	12.3	129,240
	90°	8.24	98,910	8,643	11.4	128,398
	95°	8.04	96,484	9,108	10.6	127,561
42°	75°	9.12	109,473	7,452	14.7	134,898
	80°	8.94	107,241	7,830	13.7	133,959
	85°	8.74	104,927	8,237	12.7	133,030
	90°	8.54	102,525	8,672	11.8	132,113
	95°	8.34	100,033	9,136	10.9	131,205
44°	75°	9.45	113,400	7,484	15.2	138,935
	80°	9.26	111,095	7,861	14.1	137,918
	85°	9.06	108,709	8,266	13.2	136,914
	90°	8.85	106,237	8,700	12.2	135,921
	95°	8.64	103,676	9,163	11.3	134,940
45°	75°	9.62	115,399	7,501	15.4	140,991
	80°	9.42	113,057	7,877	14.4	139,935
	85°	9.22	110,634	8,282	13.4	138,891
	90°	9.01	108,117	8,716	12.4	137,856
	95°	8.79	105,520	9,179	11.5	136,837
46°	75°	9.79	117,422	7,517	15.6	143,072
	80°	9.59	115,042	7,894	14.6	141,976
	85°	9.38	112,573	8,299	13.6	140,889
	90°	9.17	110,028	8,731	12.6	139,818
	95°	8.95	107,395	9,193	11.7	138,760
48°	75°	10.13	121,542	7,553	16.1	147,311
	80°	9.92	119,084	7,927	15.0	146,132
	85°	9.71	116,547	8,330	14.0	144,967
	90°	9.49	113,917	8,762	13.0	143,812
	95°	9.27	111,209	9,222	12.1	142,674
50°	75°	10.48	125,769	7,588	16.6	151,659
	80°	10.27	123,221	7,963	15.5	150,389
	85°	10.05	120,604	8,363	14.4	149,139
	90°	9.82	117,896	8,794	13.4	147,901
	95°	9.59	115,112	9,252	12.4	146,681

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 24 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input (Watts)	COP	Heat of Absorb. (BtuH)
100°	35°	108,518	8,485	3.7	79,567
	40°	115,727	8,543	4.0	86,578
	50°	131,227	8,665	4.4	101,661
	60°	148,212	8,796	4.9	118,201
	70°	166,727	8,947	5.5	136,199
110°	35°	108,057	9,460	3.3	75,779
	40°	115,067	9,517	3.5	82,597
	50°	130,118	9,629	4.0	97,263
	60°	146,583	9,750	4.4	113,316
	70°	164,507	9,891	4.9	130,758
120°	35°	107,625	10,560	3.0	71,592
	40°	114,442	10,615	3.2	78,223
	50°	129,052	10,720	3.5	92,475
	60°	145,004	10,830	3.9	108,053
	70°	162,348	10,958	4.3	124,958
125°	35°	107,417	11,164	2.8	69,326
	40°	114,142	11,214	3.0	75,880
	50°	128,533	11,315	3.3	89,926
	60°	144,232	11,421	3.7	105,265
	70°	161,290	11,541	4.1	121,911
130°	35°	107,216	11,800	2.7	66,956
	40°	113,847	11,850	2.8	73,415
	50°	128,024	11,945	3.1	87,267
	60°	143,473	12,044	3.5	102,380
	70°	160,245	12,159	3.9	118,760

Units are complete packages featuring 1 stage operation and containing refrigeration compressor, reversing valve, expansion valve metering device and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressor, high and low refrigerant pressure switches and a lock-out control circuit.

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WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP180**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-3-60	-3	41.0	350	51.3	90
460-3-60	-4	21.8	158	27.3	45
575-3-60	-5	17.3	125	21.6	35

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
24	5.2	24	4.9
30	7.7	30	7.3
36	10.8	36	10.1
42	14.2	42	13.4
48	18.1	48	17.0

**UNIT WEIGHT**

Unit Weight (lbs) 740  
 Shipping Weight (lbs) 760



**CHILLER PERFORMANCE**

Based on 36 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	10.61	127,340	8,980	14.2	157,978
	80°	10.42	125,016	9,464	13.2	157,308
	85°	10.23	122,728	9,981	12.3	156,784
	90°	10.04	120,454	10,532	11.4	156,389
	95°	9.85	118,179	11,117	10.6	156,111
42°	75°	10.98	131,792	9,009	14.6	162,530
	80°	10.78	129,361	9,492	13.6	161,746
	85°	10.58	126,955	10,007	12.7	161,099
	90°	10.38	124,545	10,559	11.8	160,572
	95°	10.18	122,132	11,144	11.0	160,156
44°	75°	11.37	136,389	9,037	15.1	167,224
	80°	11.15	133,842	9,519	14.1	166,322
	85°	10.94	131,311	10,035	13.1	165,550
	90°	10.73	128,781	10,584	12.2	164,895
	95°	10.52	126,222	11,171	11.3	164,338
45°	75°	11.56	138,732	9,053	15.3	169,621
	80°	11.34	136,131	9,534	14.3	168,662
	85°	11.13	133,549	10,047	13.3	167,831
	90°	10.91	130,948	10,598	12.4	167,108
	95°	10.69	128,320	11,184	11.5	166,481
46°	75°	11.76	141,118	9,068	15.6	172,058
	80°	11.54	138,464	9,548	14.5	171,040
	85°	11.32	135,815	10,061	13.5	170,145
	90°	11.10	133,158	10,610	12.6	169,358
	95°	10.87	130,453	11,198	11.6	168,660
48°	75°	12.17	145,998	9,098	16.0	177,041
	80°	11.94	143,237	9,575	15.0	175,907
	85°	11.71	140,471	10,087	13.9	174,888
	90°	11.47	137,678	10,635	12.9	173,966
	95°	11.24	134,836	11,223	12.0	173,128
50°	75°	12.59	151,025	9,129	16.5	182,174
	80°	12.35	148,157	9,603	15.4	180,924
	85°	12.11	145,266	10,114	14.4	179,776
	90°	11.86	142,346	10,661	13.4	178,722
	95°	11.61	139,366	11,248	12.4	177,743

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 36 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input Watts	COP	Heat of Absorb. (BtuH)
100°	35°	136,373	10,384	3.8	100,944
	40°	144,542	10,449	4.1	108,889
	50°	162,647	10,571	4.5	126,579
	60°	183,247	10,683	5.0	146,795
	70°	206,495	10,791	5.6	169,676
110°	35°	137,648	11,580	3.5	98,137
	40°	145,261	11,654	3.7	105,496
	50°	162,273	11,788	4.0	122,053
	60°	181,807	11,900	4.5	141,203
	70°	204,017	11,999	5.0	163,077
120°	35°	139,379	12,926	3.2	95,276
	40°	146,365	13,014	3.3	101,960
	50°	162,147	13,169	3.6	117,215
	60°	180,482	13,295	4.0	135,120
	70°	201,526	13,395	4.4	155,824
125°	35°	140,378	13,659	3.0	93,774
	40°	147,024	13,758	3.1	100,082
	50°	162,139	13,927	3.4	114,620
	60°	179,825	14,063	3.7	131,842
	70°	200,239	14,168	4.1	151,899
130°	35°	141,446	14,436	2.9	92,191
	40°	147,733	14,544	3.0	98,108
	50°	162,147	14,734	3.2	111,877
	60°	179,150	14,882	3.5	128,374
	70°	198,898	14,996	3.9	147,731

Units are complete packages featuring 1 stage operation and containing refrigeration compressor, reversing valve, expansion valve metering device and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressor, high and low refrigerant pressure switches and a lock-out control circuit.

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WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP210**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-3-60	-3	48.1	425	60.1	100
460-60-3	-4	23.8	187	29.6	50
575-3-60	-5	21.8	148	27.3	45

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
24	5.2	24	4.9
30	7.7	30	7.3
36	10.8	36	10.1
42	14.2	42	13.4
48	18.1	48	17.0

**UNIT WEIGHT**

Unit Weight (lbs) 770  
 Shipping Weight (lbs) 790



**CHILLER PERFORMANCE**

Based on 42 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	12.48	149,760	11,216	13.4	188,028
	80°	12.21	146,509	11,862	12.4	186,981
	85°	11.92	143,050	12,541	11.4	185,840
	90°	11.62	139,414	13,251	10.5	184,627
	95°	11.30	135,602	13,996	9.7	183,354
42°	75°	12.96	155,519	11,227	13.9	193,825
	80°	12.68	152,138	11,873	12.8	192,649
	85°	12.38	148,556	12,553	11.8	191,387
	90°	12.07	144,801	13,266	10.9	190,063
	95°	11.74	140,866	14,015	10.1	188,686
44°	75°	13.45	161,449	11,237	14.4	199,788
	80°	13.16	157,933	11,882	13.3	198,475
	85°	12.85	154,222	12,563	12.3	197,086
	90°	12.53	150,334	13,278	11.3	195,640
	95°	12.19	146,281	14,031	10.4	194,154
45°	75°	13.71	164,477	11,241	14.6	202,833
	80°	13.41	160,882	11,888	13.5	201,444
	85°	13.09	157,113	12,567	12.5	199,992
	90°	12.76	153,162	13,283	11.5	198,485
	95°	12.42	149,037	14,039	10.6	196,938
46°	75°	13.96	167,548	11,246	14.9	205,920
	80°	13.66	163,882	11,892	13.8	204,458
	85°	13.34	160,035	12,573	12.7	202,934
	90°	13.00	156,018	13,290	11.7	201,363
	95°	12.65	151,841	14,045	10.8	199,761
48°	75°	14.49	173,828	11,255	15.4	212,230
	80°	14.17	170,016	11,899	14.3	210,617
	85°	13.83	166,019	12,581	13.2	208,946
	90°	13.49	161,867	13,299	12.2	207,242
	95°	13.13	157,550	14,057	11.2	205,512
50°	75°	15.02	180,288	11,264	16.0	218,721
	80°	14.69	176,314	11,908	14.8	216,944
	85°	14.35	172,169	12,589	13.7	215,124
	90°	13.99	167,876	13,307	12.6	213,280
	95°	13.62	163,425	14,066	11.6	211,419

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 42 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input (Watts)	COP	Heat of Absorb. (BtuH)
100°	35°	158,397	13,133	3.5	113,586
	40°	169,313	13,193	3.8	124,299
	50°	192,769	13,273	4.3	147,482
	60°	218,696	13,313	4.8	173,272
	70°	247,430	13,339	5.4	201,918
110°	35°	157,272	14,608	3.2	107,429
	40°	167,962	14,696	3.3	117,820
	50°	190,804	14,815	3.8	140,255
	60°	215,905	14,877	4.3	165,144
	70°	243,619	14,906	4.8	192,761
120°	35°	155,892	16,217	2.8	100,559
	40°	166,428	16,339	3.0	110,678
	50°	188,794	16,516	3.4	132,440
	60°	213,208	16,617	3.8	156,510
	70°	240,028	16,668	4.2	183,158
125°	35°	155,147	17,074	2.7	96,891
	40°	165,630	17,220	2.8	106,876
	50°	187,811	17,431	3.2	128,337
	60°	211,929	17,559	3.5	152,019
	70°	238,352	17,627	4.0	178,208
130°	35°	154,384	17,972	2.5	93,065
	40°	164,835	18,138	2.7	102,949
	50°	186,865	18,388	3.0	124,126
	60°	210,723	18,548	3.3	147,438
	70°	236,781	18,638	3.7	173,186

Units are complete packages featuring 1 stage operation and containing refrigeration compressor, reversing valve, expansion valve metering device and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressor, high and low refrigerant pressure switches and a lock-out control circuit.

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WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP240**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor (Ea)		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-3-60	-3	37.8	239	85.1	110
460-3-60	-4	17.3	125	38.7	50
575-3-60	-5	12.4	80	27.9	40

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
24	4.3	24	4.1
36	9.0	36	8.5
48	15.1	48	14.2
60	22.6	60	21.2
72	31.3	72	29.5

**UNIT WEIGHT**

Unit Weight (lbs) 970  
 Shipping Weight (lbs) 990



**CHILLER PERFORMANCE**

Based on 48 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	17.61	211,275	14,843	14.2	261,917
	80°	17.25	206,960	15,601	13.3	260,190
	85°	16.87	202,468	16,416	12.3	258,480
	90°	16.48	197,810	17,287	11.4	256,792
	95°	16.08	192,967	18,217	10.6	255,123
42°	75°	18.24	218,938	14,905	14.7	269,792
	80°	17.87	214,474	15,662	13.7	267,914
	85°	17.49	209,844	16,475	12.7	266,057
	90°	17.09	205,050	17,343	11.8	264,225
	95°	16.67	200,065	18,272	10.9	262,410
44°	75°	18.90	226,791	14,969	15.2	277,866
	80°	18.52	222,181	15,724	14.1	275,833
	85°	18.12	217,409	16,534	13.1	273,824
	90°	17.71	212,465	17,401	12.2	271,839
	95°	17.28	207,342	18,328	11.3	269,876
45°	75°	19.23	230,790	15,002	15.4	281,978
	80°	18.84	226,105	15,756	14.4	279,865
	85°	18.44	221,259	16,565	13.4	277,779
	90°	18.02	216,234	17,432	12.4	275,713
	95°	17.59	211,039	18,357	11.5	273,674
46°	75°	19.57	234,836	15,036	15.6	286,140
	80°	19.17	230,076	15,789	14.6	283,947
	85°	18.76	225,146	16,598	13.6	281,777
	90°	18.34	220,056	17,462	12.6	279,636
	95°	17.90	214,789	18,385	11.7	277,520
48°	75°	20.26	243,084	15,105	16.1	294,623
	80°	19.85	238,159	15,856	15.0	292,260
	85°	19.42	233,084	16,661	14.0	289,930
	90°	18.99	227,834	17,523	13.0	287,624
	95°	18.53	222,419	18,444	12.1	285,349
50°	75°	20.96	251,529	15,177	16.6	303,313
	80°	20.54	246,441	15,925	15.5	300,778
	85°	20.10	241,199	16,728	14.4	298,275
	90°	19.65	235,792	17,588	13.4	295,801
	95°	19.18	230,214	18,506	12.4	293,357

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 48 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input (Watts)	COP	Heat of Absorb. (BtuH)
100°	35°	217,035	16,970	3.7	159,134
	40°	231,453	17,089	4.0	173,147
	50°	262,454	17,331	4.4	203,322
	60°	296,422	17,593	4.9	236,395
	70°	333,451	17,896	5.5	272,390
110°	35°	216,113	18,920	3.3	151,558
	40°	230,135	19,033	3.5	165,193
	50°	260,236	19,259	4.0	194,525
	60°	293,163	19,502	4.4	226,623
	70°	329,013	19,782	4.9	261,516
120°	35°	215,248	21,124	3.0	143,175
	40°	228,884	21,231	3.2	156,445
	50°	258,103	21,440	3.5	184,951
	60°	290,006	21,662	3.9	216,096
	70°	324,693	21,919	4.3	249,907
125°	35°	214,834	22,328	2.8	138,652
	40°	228,282	22,430	3.0	151,750
	50°	257,067	22,630	3.3	179,852
	60°	288,464	22,841	3.7	210,529
	70°	322,577	23,085	4.1	243,812
130°	35°	214,432	23,602	2.7	133,900
	40°	227,692	23,702	2.8	146,819
	50°	256,048	23,891	3.1	174,534
	60°	286,944	24,090	3.5	204,749
	70°	320,486	24,319	3.9	237,509

Units are complete packages featuring 2 stage operation and containing refrigeration compressors, reversing valves, expansion valve metering devices and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressors, high and low refrigerant pressure switches and a lock-out control circuit.

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WATER COOLED CHILLERS AND LOW TEMP BOILERS  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP360**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor (Ea)		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-3-60	-3	41.0	350	92.3	125
460-3-60	-4	23.7	158	49.1	70
575-3-60	-5	17.3	125	38.9	50

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
54	11.1	54	10.4
60	13.4	60	12.6
72	18.6	72	17.5
84	24.6	84	23.1
96	31.2	96	29.4

**UNIT WEIGHT**

Unit Weight (lbs) 1490  
 Shipping Weight (lbs) 1510



**CHILLER PERFORMANCE**

Based on 72 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	21.22	254,680	17,959	14.2	315,956
	80°	20.84	250,032	18,929	13.2	314,616
	85°	20.45	245,449	19,964	12.3	313,566
	90°	20.08	240,908	21,064	11.4	312,779
	95°	19.70	236,350	22,237	10.6	312,221
42°	75°	21.97	263,584	18,017	14.6	325,060
	80°	21.56	258,713	18,985	13.6	323,489
	85°	21.16	253,902	20,016	12.7	322,195
	90°	20.76	249,090	21,118	11.8	321,145
	95°	20.35	244,256	22,290	11.0	320,311
44°	75°	22.73	272,770	18,076	15.1	334,445
	80°	22.31	267,676	19,040	14.1	332,641
	85°	21.89	262,622	20,070	13.1	331,100
	90°	21.46	257,562	21,168	12.2	329,789
	95°	21.04	252,437	22,344	11.3	328,675
45°	75°	23.12	277,464	18,106	15.3	339,242
	80°	22.69	272,263	19,068	14.3	337,324
	85°	22.26	267,091	20,096	13.3	335,659
	90°	21.82	261,896	21,196	12.4	334,215
	95°	21.39	256,640	22,369	11.5	332,963
46°	75°	23.52	282,236	18,136	15.6	344,115
	80°	23.08	276,928	19,095	14.5	342,081
	85°	22.64	271,631	20,123	13.5	340,290
	90°	22.19	266,308	21,221	12.5	338,714
	95°	21.74	260,906	22,396	11.6	337,320
48°	75°	24.33	291,996	18,196	16.0	354,081
	80°	23.87	286,466	19,152	15.0	351,812
	85°	23.41	280,934	20,175	13.9	349,773
	90°	22.95	275,349	21,272	12.9	347,930
	95°	22.47	269,672	22,446	12.0	346,256
50°	75°	25.17	302,050	18,258	16.5	364,347
	80°	24.69	296,307	19,208	15.4	361,844
	85°	24.21	290,533	20,229	14.4	359,553
	90°	23.72	284,692	21,323	13.4	357,445
	95°	23.23	278,732	22,495	12.4	355,486

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 72 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input Watts	COP	Heat of Absorb. (BtuH)
100°	35°	272,747	20,768	3.8	201,888
	40°	289,084	20,899	4.1	217,777
	50°	325,293	21,142	4.5	253,157
	60°	366,491	21,369	5.0	293,582
	70°	412,986	21,583	5.6	339,344
110°	35°	275,298	23,162	3.5	196,269
	40°	290,523	23,311	3.7	210,986
	50°	324,546	23,575	4.0	244,107
	60°	363,614	23,801	4.5	282,405
	70°	408,032	23,999	5.0	326,146
120°	35°	278,758	25,851	3.2	190,553
	40°	292,732	26,031	3.3	203,914
	50°	324,294	26,338	3.6	234,430
	60°	360,963	26,589	4.0	270,240
	70°	403,053	26,789	4.4	311,647
125°	35°	280,759	27,321	3.0	187,542
	40°	294,049	27,516	3.1	200,165
	50°	324,278	27,854	3.4	229,240
	60°	359,649	28,125	3.7	263,685
	70°	400,475	28,337	4.1	303,788
130°	35°	282,893	28,872	2.9	184,381
	40°	295,469	29,091	3.0	196,209
	50°	324,295	29,467	3.2	223,753
	60°	358,298	29,766	3.5	256,738
	70°	397,793	29,994	3.9	295,452

Units are complete packages featuring 2 stage operation and containing refrigeration compressors, reversing valves, expansion valve metering devices and water to refrigerant heat exchangers. Also included are safety controls: Overload protection for compressors, high and low refrigerant pressure switches and a lock-out control circuit.

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**WATER COOLED CHILLERS AND LOW TEMP BOILERS**  
**SPECIFICATION DATA SHEET**  
 FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

**WP420**  
 WP SERIES

**ELECTRICAL SPECIFICATIONS**

Electrical Characteristics	Elect. Symbol	Compressor (Ea)		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-3-60	-3	48.1	425	108.2	150
460-3-60	-4	23.8	187	53.3	70
575-3-60	-5	21.8	148	49.1	70

**FLUID FLOW & PRESSURE DROP**

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
54	11.1	54	10.4
60	13.4	60	12.6
72	18.6	72	17.5
84	24.6	84	23.1
96	31.2	96	29.4

**UNIT WEIGHT**

Unit Weight (lbs) 1550  
 Shipping Weight (lbs) 1570



**CHILLER PERFORMANCE**

Based on 84 GPM chilled fluid & 10°F condenser fluid temp. rise.

Leaving Chilled Fluid (F)	Entering Cond. Fluid (F)	Total Capacity (Tons)	Total Capacity (BtuH)	Power Input (Watts)	EER	Heat Rejection (BtuH)
40°	75°	24.96	299,511	22,433	13.4	376,053
	80°	24.42	293,008	23,725	12.3	373,959
	85°	23.84	286,110	25,080	11.4	371,683
	90°	23.24	278,828	26,502	10.5	369,254
	95°	22.60	271,192	27,993	9.7	366,705
42°	75°	25.92	311,038	22,454	13.9	387,651
	80°	25.36	304,267	23,748	12.8	385,294
	85°	24.76	297,111	25,107	11.8	382,775
	90°	24.13	289,592	26,533	10.9	380,123
	95°	23.48	281,732	28,030	10.1	377,371
44°	75°	26.91	322,898	22,473	14.4	399,576
	80°	26.32	315,858	23,766	13.3	396,946
	85°	25.70	308,434	25,127	12.3	394,168
	90°	25.05	300,658	26,559	11.3	391,277
	95°	24.38	292,552	28,063	10.4	388,304
45°	75°	27.41	328,954	22,483	14.6	405,665
	80°	26.81	321,765	23,776	13.5	402,889
	85°	26.18	314,217	25,136	12.5	399,981
	90°	25.53	306,314	26,569	11.5	396,966
	95°	24.84	298,074	28,078	10.6	393,875
46°	75°	27.92	335,095	22,492	14.9	411,840
	80°	27.31	327,763	23,785	13.8	408,917
	85°	26.67	320,069	25,146	12.7	405,869
	90°	26.00	312,035	26,580	11.7	402,727
	95°	25.31	303,682	28,089	10.8	399,521
48°	75°	28.97	347,648	22,511	15.4	424,456
	80°	28.34	340,023	23,800	14.3	421,229
	85°	27.67	332,037	25,163	13.2	417,892
	90°	26.98	323,723	26,600	12.2	414,481
	95°	26.26	315,100	28,114	11.2	411,025
50°	75°	30.05	360,568	22,530	16.0	437,438
	80°	29.39	352,627	23,816	14.8	433,888
	85°	28.69	344,339	25,178	13.7	430,247
	90°	27.98	335,742	26,616	12.6	426,555
	95°	27.24	326,849	28,133	11.6	422,838

**HEATING PERFORMANCE**

Based on 10°F load temp. rise & 84 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (BtuH)	Power Input (Watts)	COP	Heat of Absorb. (BtuH)
100°	35°	316,794	26,266	3.5	227,173
	40°	338,625	26,388	3.8	248,590
	50°	385,537	26,546	4.3	294,964
	60°	437,388	26,627	4.8	346,536
	70°	494,860	26,677	5.4	403,837
110°	35°	314,542	29,219	3.2	214,847
	40°	335,924	29,392	3.3	235,640
	50°	381,607	29,630	3.8	280,510
	60°	431,811	29,755	4.3	330,288
	70°	487,235	29,813	4.8	385,512
120°	35°	311,785	32,434	2.8	201,118
	40°	332,856	32,679	3.0	221,355
	50°	377,588	33,032	3.4	264,881
	60°	426,412	33,236	3.8	313,010
	70°	480,053	33,337	4.2	366,306
125°	35°	310,292	34,151	2.7	193,770
	40°	331,259	34,440	2.8	213,752
	50°	375,621	34,862	3.2	256,673
	60°	423,859	35,118	3.5	304,038
	70°	476,704	35,254	4.0	356,417
130°	35°	308,767	35,943	2.5	186,129
	40°	329,667	36,278	2.7	205,885
	50°	373,727	36,778	3.0	248,240
	60°	421,443	37,098	3.3	294,865
	70°	473,561	37,277	3.7	346,372

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