AQUARIUS WW SERIES

MODULAR CHILLER

water to water heat pumps

Our **Aquarius WW Series** water-cooled modular reverse cycle chillers are designed to meet all your replacement or new construction chiller requirements. Specifically designed and optimized for use with refrigerant R-410A, the industry's alternative to R-22, ensures the availability of refrigerant over the service life of the unit.

The **Aquarius WW Series** is available in sizes from 2 to 35 nominal tons with single or dual compressor models that fit easily through a standard 36" door. The modular design gives you the flexibility to install units individually or in any combination to match the exact load requirement.

Our chillers have a fraction of the refrigerant charge of central station chillers and operate at a significantly reduced sound level. If you need to replace an old chiller or install a new one, FHP has the versatility, design and quick delivery to meet your HVAC needs.

Superior Efficiency

Our highly efficient units can greatly reduce operational costs while at full load or part load conditions. They may be selected to meet your specific load requirements greatly reducing the initial cost compared to large central station chillers.

Increased Redundancy

Multiple unit installations provide redundancy that helps prevent unwanted down time during emergency repairs or scheduled maintenance. Modules can be added at any time to increase capacity.

Space Savings

Modular chillers typically occupy far less space than standard central station chillers and can be moved and transported easily through doorways, elevators, or hallways.

Reverse Cycle Operation

Factory equipped with a reversing valve that offers unparalleled versatility for heating applications. The**Aquarius WW Series** can be utilized for Hydronic Heating, Make-Up Air Applications or Swimming Pool Heating just to mention a few of the many potential heating applications.

ISO 9001:2000 Certified

FHP MANUFACTURING

WW SERIES - WATER COOLED CHILLERS AND LOW TEMPERATURE BOILERS CAPACITY DATA

CHILLER CAPACITY DATA

MODEL	SINGLE COMPRESSOR MODELS									
	LEAVING CHILLED FLUID TEMPERATURE (˚F)									
	42˚F		44˚F		46˚F		48˚F		50˚F	
	MBTUH	EBR	MBTUH	EER	MBTUH	EER	MBTUH	EER	MBTUH	EER
WW024	23.6	12.9	24.0	13.2	25.3	13.8	25.7	14.1	26.5	14.5
WW036	25.2	13.5	25.7	13.7	27.0	14.4	27.5	14.7	28.4	15.2
WW048	49.0	13.1	39.6	13.3	41.7	13.9	42.4	14.2	43.8	14.7
WW060	50.9	13.0	51.8	13.2	54.5	13.9	55.4	14.1	57.3	14.6
WW072	54.9	13.5	55.8	13.8	58.8	14.5	59.8	14.8	61.9	15.3
WW120	110.8	14.0	112.7	14.2	118.7	14.8	120.7	15.1	124.9	15.5
WW180	126.0	14.1	128.0	14.3	134.2	14.9	136.3	15.1	140.6	15.5
WW210	164.2	13.7	167.2	13.9	176.3	14.6	179.4	14.8	185.8	15.3
DUAL COMPRESSOR MODELS										
WW122	114.5	13.8	116.6	14.1	123.1	14.9	125.3	15.2	129.8	15.7
WW240	221.6	14.0	225.5	14.2	237.4	14.8	241.5	15.1	249.7	15.5
WW360	252.0	14.1	256.0	14.3	268.4	14.9	272.6	15.1	281.2	15.5
WW420	328.5	13.7	334.4	13.9	352.6	14.6	358.9	14.8	371.7	15.3

Performance based on unit nominal flow rates and at 85˚F entering condenser water. Please refer to unit specification sheets for details.

HEATING CAPACITY DATA

MODEL	SINGLE COMPRESSOR MODELS						
	LOAD LEAVING FLUID TEMPERATURE (˚F)						
	SOURCE EENTERINGFLUID TEMP	110˚F		120˚F		125˚F	
		MBTUH	COP	MBTUH	COP	MBTUH	COP
WW024	40	25.7	3.4	25.5	3.0	25.4	2.6
	70	36.2	5.0	35.5	4.3	34.9	3.7
WW036	40	27.1	3.5	26.8	3.0	26.6	2.6
	70	38.3	5.2	37.6	4.4	36.8	3.8
WW048	40	42.1	3.5	41.7	3.0	41.5	2.6
	70	59.2	5.1	58.0	4.4	56.9	3.8
WW060	40	55.6	3.5	55.4	3.1	55.4	2.7
	70	78.1	5.0	77.0	4.4	75.9	3.9
WW072	40	58.0	3.4	57.1	3.0	56.1	2.5
	70	83.4	5.2	81.7	4.5	80.0	3.8
WW120	40	114.8	3.5	113.0	3.0	111.7	2.6
	70	167.3	5.2	163.0	4.5	158.4	3.9
WW180	40	133.0	3.7	130.8	3.2	128.6	2.8
	70	187.3	5.2	182.9	4.5	178.5	3.9
WW210	40	172.7	3.6	170.5	3.1	168.5	2.8
	70	250.7	5.2	244.6	4.5	238.7	3.9
DUAL COMPRESSOR MODELS							
WW122	40	120.3	3.5	118.6	3.0	117.0	2.6
	70	174.8	5.4	171.2	4.6	167.7	3.9
WW240	40	229.6	3.5	226.0	3.0	223.5	2.6
	70	334.6	5.2	326.0	4.5	316.9	3.9
WW360	40	229.6	3.5	226.0	3.0	223.5	2.6
	70	334.6	5.2	326.0	4.5	316.9	3.9
WW420	40	345.3	3.57	341.0	3.1	337.0	2.8
	70	501.5	5.20	489.2	4.5	477.4	3.9

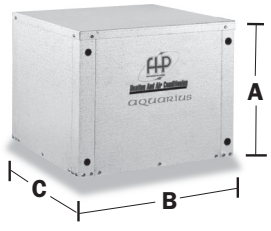
Performance at nominal flow rates. Please see specification sheets for details.

DIMENSIONS AND SPECIFICATIONS

MODEL NO.	NO CIRCUITS	DIMENSIONS			OPER. WEIGHT	WATER CONN
		A Height	B Width	C Depth		
WW024	1	24.25	32.5	24	250	0.75
WW036	1	24.25	32.5	24	250	0.75
WW048	1	24.25	32.5	24	300	1.0
WW060	1	24.25	32.5	24	310	1.0
WW072	1	24.25	32.5	24	430	1.0
WW120	1	32	28	46	500	1.25
WW122	2	32	28	46	520	1.25
WW180	1	32	28	46	740	1.5
WW210	1	32	28	46	770	1.5
WW240	2	64	28	46	970	2.0
WW360	2	64	28	46	1490	2.0
WW420	2	64	28	46	1550	2.0

Note: condenser and evaporator water connection are equal size.

*WW024 through WW072 optional double wall heat exchanger available on load side only for potable hot water heating. Unit capacity will be reduced by approximately 5%.



GEOEXCHANGE
Saving from the ground up

IGSHPA

Typical Chiller Applications
- Commercial Air Conditioning
- Food Processing
- Spot Cooling
- Make-Up Air
- Computer Room Cooling
- Clean Room
- Hospital Operating Rooms
- Lab Testing Facilities
- Residential Air Conditioning
- Marine Cooling
- Industrial Process Cooling
- Sterilizer Cooling
- Plating Process Cooling
- Injection Molding Cooling
- Custom Designed Systems

Typical Heating Applications
- Hydronic Heating
- Snow & Ice Melting
- Car Wash Heating
- Make-Up Air
- Base Board Heating
- Swimming Pool Heating
- Domestic Hot Water*

Unit Features
- Scroll Compressors
- Compact Modular Design
- Small Refrigerant Charge
- Multiple Circuits for Redundancy
- Fully Charged at the Factory
- Fits Through Doorways & Elevators
- Quick Delivery
- Whisper Quiet Design
- Easy To Install
- Meet Exact Load
- High Efficiency
- UL Approved

Selection Software
Helps match your exact job conditions (visit our web site for software downloads @ www.fhp-mfg.com)

PERFORMANCE DATA

FHP MANUFACTURING COMPANY
601 N.W. 65TH COURT • FT. LAUDERDALE, FL 33309 • PHONE: (954) 776-5471 • FAX: (800) 776-5529

GUIDE SPECIFICATIONS

WW Series Water-to-Water Reverse Cycle Chillers & Low Temp Boilers

WW024-072 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 20ºF (-7ºC) and 120ºF (49ºC) as manufactured by FHP Manufacturing in Fort Lauderdale, Florida. Refrigerant shall be R-410A.

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-410A, 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 600 PSIG (4100 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 600 PSIG (4100 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

WW Series Water-to-Water Reverse Cycle Chillers & Low Temp Boilers

WW120 - 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 20ºF (-7ºC) and 120ºF (49ºC) as manufactured by FHP Manufacturing in Fort Lauderdale, Florida. Refrigerant shall be R-410A.

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-410A, 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 600 PSIG (4100 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 600 PSIG (4100 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

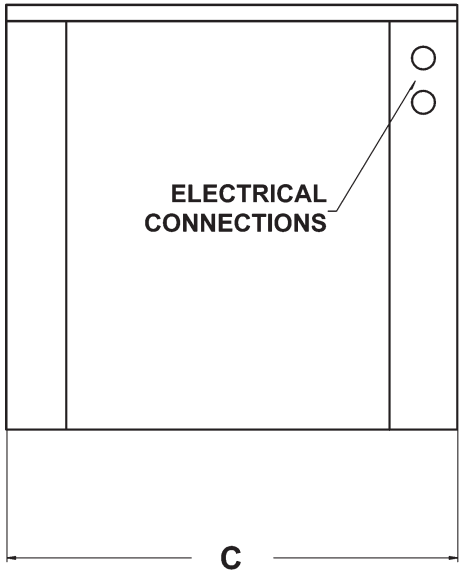
WW024-072 Series

Reverse Cycle Chillers

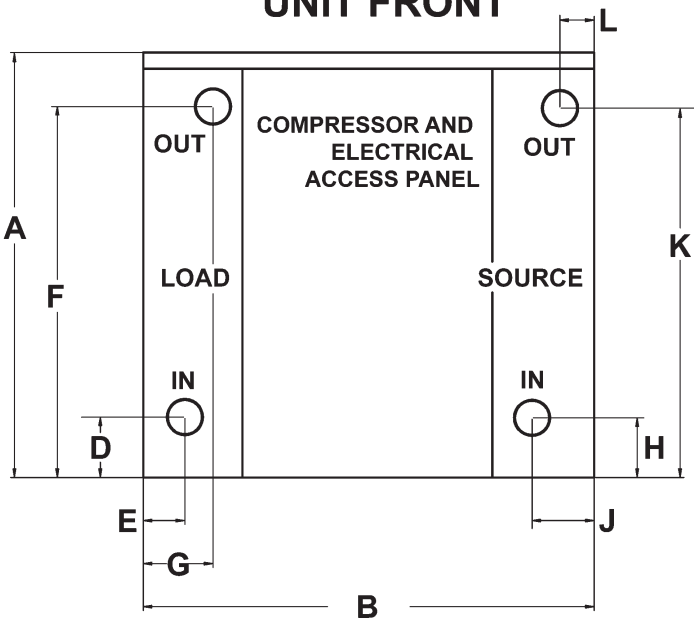
MODEL	Dimensions											
	A Height	B Width	C Depth	D	E	F	G	H	J	K	L	Water Conn.
WW024, 036	24.25	32.50	24.00	2.50	2.00	14.88	2.25	2.50	8.25	14.88	2.25	0.75 FPT
WW048	24.25	32.50	24.00	3.00	2.50	15.00	2.50	4.00	3.38	16.00	3.38	1.00 FPT
WW060	24.25	32.50	24.00	3.00	2.50	17.00	2.50	4.00	3.38	18.00	3.38	1.00 FPT
WW072	24.25	32.50	24.00	3.38	2.50	22.75	4.38	3.38	4.38	22.75	2.50	1.00 FPT

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

LEFT SIDE



UNIT FRONT



WW Series Reverse Cycle Chiller Nomenclature

WW___-__ ___ __-__ __ __

Series:
WW-Water-to-Water R-410A

Nominal Capacity:

Voltage:
1-208/230-1-60
3-208/230-3-60
4-460-3-60
5-575-3-60

Cabinet Type:
CS-No Unit Mounted Controller
US-Unit Mounted Controller

Condenser Material:
C-Copper
N-Cupro-Nickel

Water Connections:
F-Front

Return Air Location:
X-None

Supply Air Location:
X-None

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http://www.fhp-mfg.com

WW120-420 Series

Reverse Cycle Chillers

MODEL	Dimensions									
	A Height	B	C	D	E	F	G	H	J	Water Conn.
WW120	32.00	23.00	8.50	3.75	10.50	28.50	10.50	9.25	9.00	1.25 FPT
WW122	32.00	23.00	8.50	3.75	10.50	28.50	10.50	9.25	9.00	1.25 FPT
WW180	32.00	23.00	4.50	3.75	10.50	28.50	10.50	9.25	5.00	1.50 FPT
WW210	32.00	23.00	4.50	3.75	10.50	28.50	10.50	9.25	5.00	1.50 FPT
WW240	64.00	39.00	8.50	19.75	10.50	44.50	10.50	25.25	9.00	2.00 FPT
WW360	64.00	39.00	4.50	19.75	10.50	44.50	10.50	25.25	5.00	2.00 FPT
WW420	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.

WW Series Reverse Cycle Chiller Nomenclature

WW___-_ ___ _-_ _ _

Series:
WW Water-to-Water R-410A

Nominal Capacity:

Voltage:
1-208/230-1-60
3-208/230-3-60
4-460-3-60
5-575-3-60

Cabinet Type:
CS-No Unit Mounted Controls
US-Unit Mounted Controller

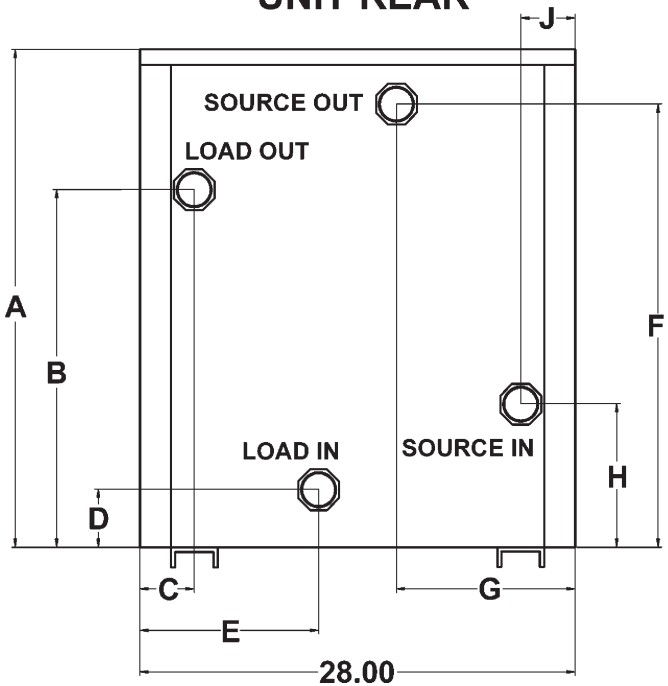
Supply Air Location:
X-None

Return Air Location:
X-None

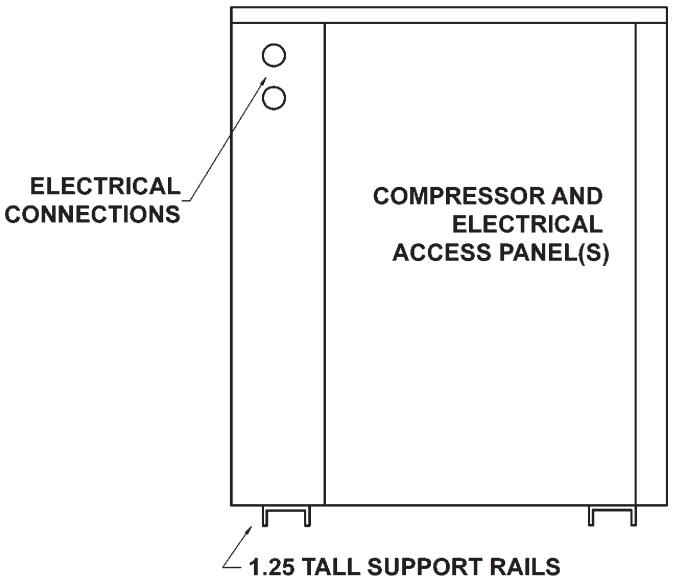
Water Connections:
R-Rear

Condenser Material:
C-Copper
N-Cupro-Nickel

UNIT REAR



UNIT FRONT



WATER COOLED CHILLERS AND LOW TEMP BOILERS

SPECIFICATION DATA SHEET

FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

WW024

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor RLA	Compressor LRA	Min. Circuit Ampacity	Max. Fuse Size
208-230/1/60	-1	13.5	69	16.9	30.0
265/1/60	-2	11.5	61	14.4	25.0

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
3	1.33	3	1.16
4	2.25	4	1.96
5	3.38	5	2.95
6	4.70	6	4.10
8	7.92	8	6.92

UNIT WEIGHT

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

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CHILLER PERFORMANCE

Based on 5.0 GPM load and 6.2 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (MBtuH)
40°	75°	2.00	23.99	1.61	14.90	29.48
	80°	1.95	23.42	1.71	13.67	29.27
	85°	1.90	22.82	1.82	12.52	29.04
	90°	1.85	22.19	1.94	11.45	28.80
	95°	1.79	21.52	2.06	10.45	28.55
42°	75°	2.07	24.82	1.61	15.41	30.31
	80°	2.02	24.23	1.71	14.13	30.08
	85°	1.97	23.61	1.82	12.94	29.83
	90°	1.91	22.96	1.94	11.84	29.57
	95°	1.86	22.27	2.06	10.80	29.31
44°	75°	2.10	25.24	1.61	15.66	30.74
	80°	2.05	24.64	1.72	14.37	30.50
	85°	2.00	24.01	1.82	13.16	30.24
	90°	1.95	23.35	1.94	12.04	29.97
	95°	1.89	22.66	2.06	10.98	29.70
45°	75°	2.14	25.66	1.61	15.92	31.17
	80°	2.09	25.06	1.72	14.60	30.92
	85°	2.04	24.42	1.83	13.38	30.65
	90°	1.98	23.75	1.94	12.24	30.37
	95°	1.92	23.04	2.06	11.17	30.09
46°	75°	2.21	26.54	1.61	16.44	32.04
	80°	2.16	25.91	1.72	15.09	31.77
	85°	2.10	25.25	1.83	13.83	31.49
	90°	2.05	24.56	1.94	12.65	31.19
	95°	1.99	23.83	2.07	11.54	30.88
48°	75°	2.25	26.98	1.61	16.71	32.49
	80°	2.20	26.35	1.72	15.33	32.21
	85°	2.14	25.68	1.83	14.05	31.91
	90°	2.08	24.97	1.94	12.85	31.60
	95°	2.02	24.24	2.07	11.73	31.29
50°	75°	2.32	27.88	1.62	17.25	33.40
	80°	2.27	27.23	1.72	15.83	33.10
	85°	2.21	26.54	1.83	14.51	32.78
	90°	2.15	25.82	1.94	13.28	32.45
	95°	2.09	25.06	2.07	12.12	32.12

HEATING PERFORMANCE

Based on 5.0 GPM load and 6.2 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	24.39	1.96	3.65	17.72
	40°	25.89	1.95	3.89	19.24
	50°	29.15	1.93	4.44	22.58
	60°	32.79	1.90	5.05	26.30
	70°	36.85	1.88	5.75	30.44
110°	35°	24.25	2.21	3.22	16.71
	40°	25.68	2.20	3.42	18.17
	50°	28.80	2.18	3.87	21.36
	60°	32.30	2.16	4.39	24.94
	70°	36.20	2.13	4.98	28.93
120°	35°	24.15	2.50	2.83	15.62
	40°	25.51	2.49	3.00	17.00
	50°	28.48	2.48	3.37	20.03
	60°	31.81	2.45	3.80	23.44
	70°	35.53	2.42	4.30	27.26
125°	35°	24.14	2.83	2.50	14.47
	40°	25.42	2.83	2.63	15.75
	50°	28.21	2.82	2.93	18.59
	60°	31.37	2.80	3.29	21.82
	70°	34.90	2.77	3.70	25.46

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

WW036

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-1-60	-1	14.8	73	18.5	30
208/230-3-60	-3	9.9	35	12.4	20
460-3-60	-4	4.5	31	5.7	15

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
4	2.2	4	2.0
5	3.4	5	2.9
6	4.7	6	4.1
8	7.9	8	6.9
10	11.8	10	10.4

UNIT WEIGHT

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

CHILLER PERFORMANCE

Based on 5.3 GPM load and 6.5 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (MBtuH)
40°	75°	2.14	25.71	1.65	15.55	31.35
	80°	2.09	25.06	1.76	14.25	31.06
	85°	2.03	24.39	1.87	13.05	30.77
	90°	1.97	23.70	1.99	11.92	30.48
	95°	1.91	22.97	2.12	10.86	30.19
42°	75°	2.22	26.60	1.65	16.09	32.25
	80°	2.16	25.94	1.76	14.74	31.94
	85°	2.10	25.24	1.87	13.50	31.63
	90°	2.04	24.53	1.99	12.33	31.31
	95°	1.98	23.78	2.12	11.24	31.00
44°	75°	2.26	27.06	1.65	16.36	32.70
	80°	2.20	26.38	1.76	14.99	32.39
	85°	2.14	25.68	1.87	13.73	32.06
	90°	2.08	24.95	1.99	12.54	31.74
	95°	2.02	24.19	2.12	11.43	31.41
45°	75°	2.29	27.52	1.65	16.63	33.17
	80°	2.24	26.83	1.76	15.25	32.84
	85°	2.18	26.12	1.87	13.96	32.51
	90°	2.11	25.38	1.99	12.75	32.17
	95°	2.05	24.61	2.12	11.62	31.83
46°	75°	2.37	28.47	1.66	17.20	34.12
	80°	2.31	27.76	1.76	15.76	33.77
	85°	2.25	27.02	1.87	14.43	33.41
	90°	2.19	26.25	1.99	13.18	33.05
	95°	2.12	25.46	2.12	12.01	32.69
48°	75°	2.41	28.95	1.66	17.48	34.60
	80°	2.35	28.23	1.76	16.02	34.24
	85°	2.29	27.48	1.87	14.67	33.87
	90°	2.22	26.70	1.99	13.40	33.50
	95°	2.16	25.89	2.12	12.21	33.12
50°	75°	2.49	29.93	1.66	18.07	35.59
	80°	2.43	29.19	1.76	16.55	35.20
	85°	2.37	28.41	1.87	15.15	34.81
	90°	2.30	27.61	1.99	13.85	34.41
	95°	2.23	26.78	2.12	12.62	34.01

HEATING PERFORMANCE

Based on 5.3 GPM load and 6.5 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	25.73	2.01	3.75	18.87
	40°	27.33	2.00	4.01	20.50
	50°	30.82	1.97	4.57	24.08
	60°	34.74	1.95	5.23	28.09
	70°	39.11	1.92	5.96	32.55
110°	35°	25.53	2.28	3.28	17.74
	40°	27.06	2.27	3.49	19.31
	50°	30.40	2.24	3.97	22.75
	60°	34.15	2.21	4.53	26.60
	70°	38.34	2.18	5.15	30.89
120°	35°	25.38	2.61	2.85	16.48
	40°	26.82	2.59	3.04	17.99
	50°	29.99	2.55	3.44	21.28
	60°	33.55	2.52	3.91	24.96
	70°	37.55	2.48	4.43	29.08
125°	35°	25.28	2.99	2.48	15.09
	40°	26.64	2.97	2.63	16.52
	50°	29.62	2.92	2.97	19.65
	60°	32.99	2.88	3.36	23.17
	70°	36.77	2.84	3.80	27.09

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

WW048

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-1-60	-1	20.6	109	25.8	45
208/230-3-60	-3	14.1	91	17.7	30
460-3-60	-4	7.1	46	8.9	15

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
6	3.1	6	2.7
7	4.1	7	3.6
8	5.3	8	4.6
10	7.9	10	6.9
12	11.0	12	9.6

UNIT WEIGHT

Unit Weight (lbs)	300
Shipping Weight (lbs)	320

CHILLER PERFORMANCE

Based on 8.1 GPM load and 10.1GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (MBtuH)
40°	75°	3.31	39.71	2.65	14.99	48.75
	80°	3.23	38.72	2.81	13.77	48.32
	85°	3.14	37.69	2.98	12.64	47.86
	90°	3.05	36.61	3.16	11.58	47.39
	95°	2.96	35.48	3.35	10.58	46.92
42°	75°	3.42	41.07	2.65	15.51	50.11
	80°	3.34	40.05	2.81	14.24	49.64
	85°	3.25	38.98	2.98	13.07	49.15
	90°	3.16	37.87	3.16	11.97	48.66
	95°	3.06	36.71	3.35	10.94	48.16
44°	75°	3.48	41.76	2.65	15.77	50.79
	80°	3.39	40.72	2.81	14.48	50.31
	85°	3.30	39.64	2.98	13.29	49.81
	90°	3.21	38.51	3.16	12.17	49.30
	95°	3.11	37.33	3.36	11.13	48.78
45°	75°	3.54	42.46	2.65	16.04	51.49
	80°	3.45	41.41	2.81	14.73	51.00
	85°	3.36	40.30	2.98	13.51	50.48
	90°	3.26	39.16	3.16	12.38	49.95
	95°	3.16	37.97	3.36	11.31	49.42
46°	75°	3.66	43.89	2.64	16.60	52.91
	80°	3.57	42.80	2.81	15.23	52.39
	85°	3.47	41.66	2.98	13.97	51.84
	90°	3.37	40.48	3.16	12.79	51.28
	95°	3.27	39.26	3.36	11.69	50.71
48°	75°	3.72	44.62	2.64	16.88	53.63
	80°	3.63	43.51	2.81	15.49	53.10
	85°	3.53	42.36	2.98	14.20	52.53
	90°	3.43	41.16	3.16	13.01	51.96
	95°	3.33	39.91	3.36	11.88	51.37
50°	75°	3.84	46.10	2.64	17.46	55.10
	80°	3.75	44.96	2.81	16.01	54.54
	85°	3.65	43.77	2.98	14.68	53.94
	90°	3.54	42.53	3.16	13.44	53.33
	95°	3.44	41.25	3.36	12.28	52.71

HEATING PERFORMANCE

Based on 8.1 GPM load and 10.1 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	40.12	3.19	3.69	29.24
	40°	42.57	3.17	3.93	31.74
	50°	47.91	3.14	4.48	37.20
	60°	53.84	3.09	5.10	43.29
	70°	60.37	3.03	5.84	50.03
110°	35°	39.76	3.60	3.24	27.48
	40°	42.11	3.58	3.45	29.89
	50°	47.22	3.54	3.91	35.14
	60°	52.91	3.49	4.44	40.99
	70°	59.21	3.44	5.05	47.48
120°	35°	39.51	4.08	2.84	25.58
	40°	41.72	4.06	3.01	27.88
	50°	46.57	4.01	3.41	32.90
	60°	52.00	3.96	3.85	38.50
	70°	58.03	3.90	4.36	44.73
125°	35°	39.42	4.66	2.48	23.52
	40°	41.49	4.62	2.63	25.71
	50°	46.05	4.56	2.96	30.49
	60°	51.18	4.50	3.33	35.83
	70°	56.90	4.43	3.76	41.78

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

WW060

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor RLA	Compressor LRA	Min. Circuit Ampacity	Max. Fuse Size
208/230-1-60	-1	29.0	145	36.3	60
208/230-3-60	-3	18.0	123	22.5	40
460-3-60	-4	9.7	70	12.2	20
575-3-60	-5	6.4	40	8.0	15

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
8	4.0	8	3.5
10	6.0	10	5.2
12	8.3	12	7.2
14	11.0	14	9.6
16	14.0	16	12.2

UNIT WEIGHT

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

CHILLER PERFORMANCE

Based on 10.5 GPM load and 13.2 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source. Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	4.3	51.41	3.48	14.77	63.28
	80°	4.2	50.35	3.69	13.63	62.95
	85°	4.1	49.23	3.92	12.57	62.59
	90°	4.0	48.07	4.15	11.59	62.23
	95°	3.9	46.85	4.40	10.65	61.85
42°	75°	4.4	53.20	3.48	15.27	65.08
	80°	4.3	52.10	3.70	14.10	64.70
	85°	4.2	50.94	3.92	13.00	64.31
	90°	4.1	49.73	4.15	11.98	63.90
	95°	4.0	48.47	4.40	11.02	63.48
44°	75°	4.5	54.11	3.48	15.53	65.99
	80°	4.4	52.99	3.70	14.33	65.60
	85°	4.3	51.81	3.92	13.22	65.18
	90°	4.2	50.58	4.15	12.18	64.75
	95°	4.1	49.30	4.40	11.20	64.31
45°	75°	4.6	55.03	3.48	15.79	66.92
	80°	4.5	53.89	3.70	14.57	66.51
	85°	4.4	52.69	3.92	13.44	66.07
	90°	4.3	51.44	4.15	12.38	65.61
	95°	4.2	50.13	4.40	11.38	65.16
46°	75°	4.7	56.92	3.49	16.32	68.81
	80°	4.6	55.73	3.70	15.06	68.35
	85°	4.5	54.49	3.92	13.89	67.87
	90°	4.4	53.19	4.16	12.79	67.37
	95°	4.3	51.83	4.41	11.76	66.87
48°	75°	4.8	57.88	3.49	16.59	69.78
	80°	4.7	56.67	3.70	15.31	69.29
	85°	4.6	55.40	3.92	14.12	68.79
	90°	4.5	54.08	4.16	13.00	68.27
	95°	4.4	52.70	4.41	11.95	67.74
50°	75°	5.0	59.84	3.49	17.14	71.75
	80°	4.9	58.58	3.70	15.82	71.22
	85°	4.8	57.26	3.93	14.58	70.66
	90°	4.7	55.89	4.16	13.43	70.10
	95°	4.5	54.47	4.41	12.34	69.52

HEATING PERFORMANCE

Based on 10.5 GPM load and 13.2 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	52.54	4.18	3.68	38.27
	40°	55.81	4.16	3.93	41.61
	50°	62.83	4.11	4.48	48.79
	60°	70.61	4.06	5.09	56.75
	70°	79.27	4.01	5.79	65.58
110°	35°	52.45	4.70	3.27	36.43
	40°	55.60	4.67	3.49	39.65
	50°	62.35	4.63	3.95	46.56
	60°	69.82	4.58	4.47	54.21
	70°	78.13	4.52	5.06	62.70
120°	35°	52.41	5.28	2.91	34.38
	40°	55.44	5.26	3.09	37.48
	50°	61.91	5.21	3.48	44.12
	60°	69.05	5.16	3.92	51.44
	70°	76.98	5.10	4.42	59.56
125°	35°	52.49	5.96	2.58	32.14
	40°	55.38	5.94	2.73	35.11
	50°	61.55	5.89	3.06	41.45
	60°	68.35	5.84	3.43	48.44
	70°	75.89	5.78	3.85	56.18

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

WW072

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor RLA	Compressor LRA	Min. Circuit Ampacity	Max. Fuse Size
208/230-1-60	-1	28.8	169	36.0	60
208/230-3-60	-3	19.3	129	24.2	40
460-3-60	-4	9.7	75	12.2	20
575-3-60	-5	8.5	54	10.7	15

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
10	5.3	10	4.6
12	7.4	12	6.4
14	9.7	14	8.5
16	12.4	16	10.8
18	15.3	18	13.4

UNIT WEIGHT

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

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CHILLER PERFORMANCE

Based on 11.0 GPM load and 13.7 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	4.7	55.89	3.58	15.62	68.10
	80°	4.5	54.47	3.81	14.30	67.47
	85°	4.4	52.96	4.06	13.05	66.80
	90°	4.3	51.35	4.32	11.88	66.09
	95°	4.1	49.64	4.61	10.78	65.35
42°	75°	4.8	57.84	3.58	16.16	70.05
	80°	4.7	56.40	3.81	14.80	69.40
	85°	4.6	54.86	4.06	13.52	68.70
	90°	4.4	53.21	4.32	12.32	67.95
	95°	4.3	51.47	4.60	11.18	67.18
44°	75°	4.9	58.84	3.58	16.44	71.05
	80°	4.8	57.38	3.81	15.06	70.38
	85°	4.7	55.82	4.06	13.76	69.66
	90°	4.5	54.16	4.32	12.54	68.90
	95°	4.4	52.40	4.60	11.38	68.11
45°	75°	5.0	59.85	3.58	16.72	72.06
	80°	4.9	58.37	3.81	15.32	71.37
	85°	4.7	56.80	4.06	14.00	70.64
	90°	4.6	55.12	4.32	12.76	69.86
	95°	4.4	53.35	4.60	11.59	69.05
46°	75°	5.2	61.91	3.58	17.30	74.12
	80°	5.0	60.40	3.81	15.86	73.40
	85°	4.9	58.79	4.05	14.50	72.63
	90°	4.8	57.08	4.32	13.22	71.81
	95°	4.6	55.27	4.60	12.01	70.97
48°	75°	5.2	62.96	3.58	17.59	75.17
	80°	5.1	61.43	3.81	16.13	74.43
	85°	5.0	59.81	4.05	14.75	73.64
	90°	4.8	58.08	4.32	13.45	72.81
	95°	4.7	56.25	4.60	12.23	71.94
50°	75°	5.4	65.11	3.58	18.19	77.32
	80°	5.3	63.54	3.81	16.69	76.54
	85°	5.2	61.88	4.05	15.27	75.71
	90°	5.0	60.11	4.32	13.93	74.84
	95°	4.9	58.24	4.60	12.66	73.93

HEATING PERFORMANCE

Based on 11.0 GPM load and 13.7 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	55.29	4.39	3.69	40.31
	40°	58.97	4.36	3.97	44.10
	50°	66.84	4.29	4.57	52.21
	60°	75.50	4.21	5.26	61.13
	70°	85.07	4.12	6.05	71.01
110°	35°	54.42	5.00	3.19	37.36
	40°	58.04	4.96	3.43	41.10
	50°	65.74	4.88	3.95	49.08
	60°	74.16	4.79	4.53	57.80
	70°	83.44	4.69	5.21	67.43
120°	35°	53.52	5.71	2.75	34.04
	40°	57.07	5.67	2.95	37.73
	50°	64.57	5.58	3.39	45.54
	60°	72.74	5.48	3.89	54.06
	70°	81.72	5.36	4.47	63.42
125°	35°	52.64	6.54	2.36	30.34
	40°	56.11	6.49	2.53	33.97
	50°	63.41	6.39	2.91	41.60
	60°	71.31	6.28	3.33	49.89
	70°	79.96	6.15	3.81	58.97

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

WW120

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Min. Circuit Ampacity	Max. Fuse Size
		RLA	LRA		
208/230-3-60	-3	37.0	239	46.3	80
460-3-60	-4	20.0	125	25.0	45
575-3-60	-5	14.3	80	17.9	30

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
18	5.4	18	4.7
22	7.7	22	6.7
26	10.5	26	9.1
30	13.6	30	11.9
34	17.0	34	14.9

UNIT WEIGHT

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

c UL us

CHILLER PERFORMANCE

Based on 22.9 GPM load and 28.5 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	9.47	113.59	7.13	15.94	137.91
	80°	9.20	110.37	7.50	14.73	135.94
	85°	8.91	106.96	7.91	13.52	133.96
	90°	8.62	103.39	8.38	12.33	131.99
	95°	8.31	99.67	8.90	11.20	130.05
42°	75°	9.79	117.48	7.16	16.41	141.91
	80°	9.52	114.23	7.53	15.18	139.91
	85°	9.23	110.79	7.94	13.95	137.89
	90°	8.93	107.17	8.41	12.74	135.86
	95°	8.62	103.38	8.93	11.58	133.84
44°	75°	9.95	119.46	7.18	16.65	143.94
	80°	9.68	116.20	7.54	15.41	141.93
	85°	9.39	112.74	7.96	14.17	139.89
	90°	9.09	109.09	8.42	12.95	137.83
	95°	8.77	105.27	8.94	11.77	135.78
45°	75°	10.12	121.45	7.19	16.89	145.99
	80°	9.85	118.19	7.56	15.64	143.97
	85°	9.56	114.71	7.97	14.39	141.91
	90°	9.25	111.03	8.44	13.16	139.82
	95°	8.93	107.18	8.95	11.97	137.73
46°	75°	10.46	125.51	7.22	17.37	150.16
	80°	10.19	122.22	7.59	16.10	148.12
	85°	9.89	118.71	8.00	14.83	146.02
	90°	9.58	114.98	8.47	13.58	143.88
	95°	9.26	111.06	8.98	12.36	141.71
48°	75°	10.63	127.57	7.24	17.62	152.28
	80°	10.36	124.27	7.61	16.34	150.23
	85°	10.06	120.74	8.02	15.05	148.11
	90°	9.75	116.99	8.48	13.79	145.93
	95°	9.42	113.04	9.00	12.56	143.73
50°	75°	10.98	131.76	7.27	18.12	156.57
	80°	10.70	128.44	7.64	16.82	154.50
	85°	10.41	124.87	8.05	15.51	152.34
	90°	10.09	121.07	8.52	14.22	150.12
	95°	9.75	117.05	9.03	12.97	147.84

HEATING PERFORMANCE

Based on 22.9 GPM load and 28.5 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	109.52	8.38	3.83	80.94
	40°	117.13	8.36	4.11	88.61
	50°	133.58	8.34	4.69	105.12
	60°	151.63	8.33	5.33	123.19
	70°	171.23	8.33	6.02	142.79
110°	35°	107.57	9.57	3.29	74.91
	40°	114.80	9.53	3.53	82.30
	50°	130.58	9.45	4.05	98.32
	60°	148.09	9.41	4.61	115.99
	70°	167.29	9.38	5.23	135.30
120°	35°	106.27	10.99	2.83	68.78
	40°	112.97	10.91	3.04	75.75
	50°	127.79	10.78	3.47	91.01
	60°	144.48	10.69	3.96	108.02
	70°	163.00	10.62	4.50	126.76
125°	35°	105.70	12.62	2.45	62.64
	40°	111.73	12.51	2.62	69.06
	50°	125.31	12.32	2.98	83.28
	60°	140.88	12.17	3.39	99.35
	70°	158.42	12.07	3.85	117.25

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

WW122

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressors (2) RLA (EA)	Compressors (2) LRA (EA)	Min. Circuit Ampacity	Max. Fuse Size
208/230-1-60	-1	28.8	169	64.8	80.0
208-230/3/60	-3	19.3	129	43.5	60.0
460/3/60	-4	9.7	75	21.8	30.0

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
18	5.4	18	4.7
22	7.7	22	6.7
26	10.5	26	9.1
30	13.6	30	11.9
34	17.0	34	14.9

UNIT WEIGHT

Unit Weight (lbs)	520
Shipping Weight (lbs)	540

c UL us

CHILLER PERFORMANCE

Based on 23 GPM load and 30 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	9.69	116.30	7.31	15.91	141.24
	80°	9.45	113.41	7.78	14.57	139.97
	85°	9.19	110.32	8.29	13.31	138.61
	90°	8.92	107.04	8.84	12.11	137.19
	95°	8.63	103.57	9.43	10.99	135.73
42°	75°	10.05	120.58	7.31	16.51	145.50
	80°	9.80	117.61	7.78	15.12	144.15
	85°	9.54	114.45	8.29	13.81	142.72
	90°	9.26	111.09	8.83	12.58	141.22
	95°	8.96	107.54	9.42	11.42	139.67
44°	75°	10.23	122.76	7.30	16.81	147.68
	80°	9.98	119.76	7.78	15.40	146.29
	85°	9.71	116.55	8.28	14.07	144.81
	90°	9.43	113.15	8.83	12.82	143.27
	95°	9.13	109.56	9.41	11.64	141.68
45°	75°	10.42	124.98	7.30	17.12	149.89
	80°	10.16	121.93	7.77	15.69	148.46
	85°	9.89	118.69	8.28	14.34	146.94
	90°	9.60	115.25	8.82	13.06	145.35
	95°	9.30	111.61	9.41	11.86	143.72
46°	75°	10.79	129.52	7.30	17.75	154.41
	80°	10.53	126.38	7.77	16.27	152.88
	85°	10.25	123.05	8.27	14.88	151.28
	90°	9.96	119.52	8.82	13.56	149.60
	95°	9.65	115.80	9.40	12.32	147.88
48°	75°	10.99	131.83	7.29	18.07	156.72
	80°	10.72	128.66	7.76	16.57	155.15
	85°	10.44	125.28	8.27	15.15	153.49
	90°	10.14	121.71	8.81	13.81	151.77
	95°	9.83	117.93	9.40	12.55	150.00
50°	75°	11.38	136.58	7.29	18.74	161.45
	80°	11.11	133.31	7.76	17.19	159.77
	85°	10.82	129.84	8.26	15.72	158.02
	90°	10.51	126.17	8.80	14.33	156.20
	95°	10.19	122.30	9.39	13.03	154.32

HEATING PERFORMANCE

Based on 23 GPM load and 30 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	114.15	9.01	3.71	83.41
	40°	121.91	8.93	4.00	91.44
	50°	138.67	8.76	4.64	108.78
	60°	157.33	8.57	5.38	128.09
	70°	178.19	8.36	6.25	149.69
110°	35°	112.67	10.28	3.21	77.61
	40°	120.25	10.19	3.46	85.49
	50°	136.55	9.99	4.00	102.46
	60°	154.62	9.77	4.64	121.28
	70°	174.78	9.53	5.38	142.27
120°	35°	111.19	11.75	2.77	71.09
	40°	118.58	11.66	2.98	78.81
	50°	134.38	11.44	3.44	95.36
	60°	151.83	11.19	3.98	113.65
	70°	171.24	10.91	4.60	134.00
125°	35°	109.85	13.48	2.39	63.84
	40°	117.02	13.37	2.56	71.38
	50°	132.28	13.13	2.95	87.47
	60°	149.07	12.86	3.40	105.19
	70°	167.69	12.55	3.92	124.86

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.

FHP MANUFACTURING

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WATER COOLED CHILLERS AND LOW TEMP BOILERS

SPECIFICATION DATA SHEET

FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

WW180

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor RLA	Compressor LRA	Min. Circuit Ampacity	Max. Fuse Size
208/230-3-60	-3	53.6	245	67.0	120
460-3-60	-4	20.7	125	25.9	40
575-3-60	-5	16.4	100	20.5	35

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
22	4.6	22	4.0
26	6.2	26	5.4
30	8.1	30	7.0
34	10.1	34	8.8
38	12.4	38	10.8

UNIT WEIGHT

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

c UL us

CHILLER PERFORMANCE

Based on 25.9 GPM load and 32.2 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	10.7	128.90	7.95	16.22	156.02
	80°	10.5	125.49	8.40	14.93	154.17
	85°	10.2	122.01	8.89	13.72	152.36
	90°	9.9	118.45	9.42	12.58	150.58
	95°	9.6	114.77	9.98	11.50	148.83
42°	75°	11.1	133.06	7.99	16.66	160.31
	80°	10.8	129.55	8.44	15.35	158.35
	85°	10.5	125.97	8.93	14.11	156.44
	90°	10.2	122.31	9.45	12.94	154.57
	95°	9.9	118.54	10.02	11.84	152.71
44°	75°	11.3	135.18	8.00	16.89	162.49
	80°	11.0	131.62	8.46	15.56	160.48
	85°	10.7	127.99	8.95	14.30	158.52
	90°	10.4	124.28	9.47	13.12	156.59
	95°	10.0	120.46	10.03	12.01	154.69
45°	75°	11.4	137.33	8.02	17.12	164.71
	80°	11.1	133.71	8.48	15.77	162.64
	85°	10.8	130.03	8.97	14.50	160.63
	90°	10.5	126.27	9.49	13.31	158.65
	95°	10.2	122.40	10.05	12.18	156.69
46°	75°	11.8	141.71	8.06	17.57	169.22
	80°	11.5	137.98	8.52	16.20	167.04
	85°	11.2	134.19	9.00	14.90	164.91
	90°	10.9	130.32	9.53	13.68	162.82
	95°	10.5	126.34	10.09	12.53	160.76
48°	75°	12.0	143.94	8.08	17.81	171.52
	80°	11.7	140.15	8.54	16.42	169.28
	85°	11.4	136.30	9.02	15.10	167.09
	90°	11.0	132.38	9.55	13.87	164.95
	95°	10.7	128.35	10.11	12.70	162.83
50°	75°	12.4	148.48	8.13	18.27	176.20
	80°	12.0	144.57	8.58	16.85	173.84
	85°	11.7	140.61	9.06	15.51	171.53
	90°	11.4	136.57	9.59	14.25	169.27
	95°	11.0	132.43	10.14	13.06	167.04

HEATING PERFORMANCE

Based on 25.9 GPM load and 32.2 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	127.17	9.35	3.99	95.27
	40°	135.05	9.35	4.23	103.14
	50°	152.05	9.37	4.76	120.09
	60°	170.86	9.39	5.33	138.82
	70°	191.67	9.43	5.96	159.51
110°	35°	125.33	10.57	3.48	89.28
	40°	132.95	10.56	3.69	96.92
	50°	149.32	10.55	4.15	113.31
	60°	167.35	10.56	4.65	131.34
	70°	187.25	10.57	5.19	151.18
120°	35°	123.45	11.96	3.03	82.65
	40°	130.82	11.94	3.21	90.08
	50°	146.59	11.91	3.61	105.95
	60°	163.89	11.89	4.04	123.31
	70°	182.90	11.89	4.51	142.33
125°	35°	121.46	13.55	2.63	75.24
	40°	128.61	13.52	2.79	82.49
	50°	143.81	13.46	3.13	97.87
	60°	160.39	13.42	3.50	114.59
	70°	178.54	13.40	3.91	132.84

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

WW210

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor RLA	Compressor LRA	Min. Circuit Ampacity	Max. Fuse Size
208/230-3-60	-3	59.1	425	73.9	130
460-3-60	-4	26.4	187	33.0	50
575-3-60	-5	26.0	148	32.5	50

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
25	5.8	25	5.0
30	8.0	30	7.0
35	10.6	35	9.3
40	13.5	40	11.8
45	16.8	45	14.7

UNIT WEIGHT

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

c UL us

CHILLER PERFORMANCE

Based on 34.0 GPM load & 42.1 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	13.97	167.70	10.73	15.63	204.31
	80°	13.59	163.12	11.30	14.43	201.69
	85°	13.20	158.45	11.94	13.27	199.18
	90°	12.81	153.69	12.63	12.17	196.77
	95°	12.40	148.84	13.37	11.13	194.46
42°	75°	14.48	173.80	10.79	16.11	210.62
	80°	14.09	169.06	11.36	14.89	207.81
	85°	13.69	164.24	11.99	13.70	205.13
	90°	13.28	159.31	12.67	12.57	202.55
	95°	12.86	154.29	13.41	11.50	200.06
44°	75°	14.74	176.92	10.82	16.35	213.84
	80°	14.34	172.10	11.39	15.12	210.95
	85°	13.93	167.19	12.01	13.92	208.17
	90°	13.52	162.19	12.69	12.78	205.50
	95°	13.09	157.08	13.44	11.69	202.92
45°	75°	15.01	180.09	10.85	16.59	217.12
	80°	14.60	175.18	11.41	15.35	214.13
	85°	14.18	170.19	12.04	14.14	211.26
	90°	13.76	165.10	12.72	12.98	208.49
	95°	13.33	159.91	13.46	11.88	205.83
46°	75°	15.55	186.55	10.93	17.07	223.83
	80°	15.12	181.48	11.48	15.81	220.65
	85°	14.69	176.32	12.09	14.58	217.58
	90°	14.25	171.05	12.77	13.40	214.62
	95°	13.81	165.68	13.51	12.27	211.76
48°	75°	15.82	189.85	10.97	17.31	227.27
	80°	15.39	184.70	11.51	16.04	223.98
	85°	14.95	179.44	12.12	14.80	220.81
	90°	14.51	174.09	12.80	13.61	217.75
	95°	14.05	168.63	13.53	12.46	214.79
50°	75°	16.38	196.60	11.05	17.80	234.29
	80°	15.94	191.27	11.58	16.51	230.79
	85°	15.49	185.83	12.19	15.25	227.41
	90°	15.02	180.30	12.85	14.03	224.15
	95°	14.55	174.65	13.58	12.86	221.00

HEATING PERFORMANCE

Based on 34.0 GPM load and 42.1 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	164.07	12.59	3.82	121.10
	40°	175.01	12.58	4.08	132.09
	50°	199.05	12.56	4.64	156.19
	60°	226.30	12.58	5.27	183.36
	70°	257.17	12.70	5.94	213.84
110°	35°	162.19	14.16	3.36	113.89
	40°	172.66	14.16	3.57	124.36
	50°	195.56	14.13	4.06	147.35
	60°	221.45	14.11	4.60	173.31
	70°	250.73	14.14	5.20	202.48
120°	35°	160.51	15.89	2.96	106.29
	40°	170.51	15.92	3.14	116.20
	50°	192.32	15.92	3.54	138.00
	60°	216.87	15.89	4.00	162.66
	70°	244.60	15.88	4.52	190.43
125°	35°	158.93	17.79	2.62	98.24
	40°	168.49	17.86	2.77	107.56
	50°	189.23	17.92	3.09	128.08
	60°	212.49	17.92	3.48	151.36
	70°	238.69	17.89	3.91	177.65

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

TWO-STAGE

WW240

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor (Ea) RLA	Compressor (Ea) LRA	Min. Circuit Ampacity	Max. Fuse Size
208/230-3-60	-3	37.0	239	83.3	120
460-3-60	-4	20.0	125	45.0	60
575-3-60	-5	14.3	80	32.2	45

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
36	5.4	36	4.7
44	7.7	44	6.7
52	10.5	52	9.1
60	13.6	60	11.9
68	17.0	68	14.9

UNIT WEIGHT

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

c UL US

CHILLER PERFORMANCE

Based on 45.8 GPM load and 57 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	18.93	227.18	14.26	15.94	275.83
	80°	18.39	220.73	14.99	14.73	271.88
	85°	17.83	213.92	15.83	13.52	267.92
	90°	17.23	206.78	16.76	12.33	263.98
	95°	16.61	199.34	17.80	11.20	260.09
42°	75°	19.58	234.96	14.32	16.41	283.82
	80°	19.04	228.47	15.05	15.18	279.83
	85°	18.47	221.58	15.89	13.95	275.78
	90°	17.86	214.34	16.82	12.74	271.72
	95°	17.23	206.77	17.86	11.58	267.69
44°	75°	19.91	238.91	14.35	16.65	287.88
	80°	19.37	232.40	15.08	15.41	283.87
	85°	18.79	225.48	15.92	14.17	279.78
	90°	18.18	218.18	16.85	12.95	275.67
	95°	17.55	210.54	17.88	11.77	271.56
45°	75°	20.24	242.91	14.38	16.89	291.99
	80°	19.70	236.37	15.12	15.64	287.95
	85°	19.12	229.41	15.95	14.39	283.82
	90°	18.51	222.06	16.88	13.16	279.65
	95°	17.86	214.36	17.91	11.97	275.47
46°	75°	20.92	251.02	14.45	17.37	300.32
	80°	20.37	244.45	15.18	16.10	296.24
	85°	19.78	237.41	16.01	14.83	292.04
	90°	19.16	229.96	16.94	13.58	287.75
	95°	18.51	222.12	17.96	12.36	283.42
48°	75°	21.26	255.14	14.48	17.62	304.55
	80°	20.71	248.55	15.21	16.34	300.45
	85°	20.12	241.48	16.04	15.05	296.21
	90°	19.50	233.97	16.97	13.79	291.87
	95°	18.84	226.07	17.99	12.56	287.46
50°	75°	21.96	263.52	14.54	18.12	313.14
	80°	21.41	256.88	15.28	16.82	309.00
	85°	20.81	249.74	16.10	15.51	304.69
	90°	20.18	242.13	17.03	14.22	300.24
	95°	19.51	234.09	18.05	12.97	295.69

HEATING PERFORMANCE

Based on 45.8GPM load and 57 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	219.05	16.75	3.83	161.89
	40°	234.27	16.72	4.11	177.22
	50°	267.16	16.68	4.69	210.25
	60°	303.25	16.67	5.33	246.38
	70°	342.45	16.67	6.02	285.58
110°	35°	215.15	19.14	3.29	149.83
	40°	229.61	19.05	3.53	164.60
	50°	261.16	18.91	4.05	196.64
	60°	296.18	18.82	4.61	231.99
	70°	334.59	18.76	5.23	270.60
120°	35°	212.54	21.98	2.83	137.56
	40°	225.95	21.82	3.04	151.51
	50°	255.59	21.56	3.47	182.02
	60°	288.96	21.37	3.96	216.03
	70°	326.00	21.24	4.50	253.52
125°	35°	211.40	25.24	2.45	125.27
	40°	223.47	25.02	2.62	138.12
	50°	250.62	24.63	2.98	166.57
	60°	281.77	24.35	3.39	198.70
	70°	316.85	24.13	3.85	234.51

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.

FHP MANUFACTURING

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WATER COOLED CHILLERS AND LOW TEMP BOILERS

SPECIFICATION DATA SHEET

FHP MANUFACTURING ENERGY WISE HVAC EQUIPMENT

TWO-STAGE

WW360

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor (Ea) RLA	Compressor (Ea) LRA	Min. Circuit Ampacity	Max. Fuse Size
208/230-3-60	-3	53.6	245	120.6	170
460-3-60	-4	20.7	125	46.6	60
575-3-60	-5	16.4	100	36.9	50

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
44	4.6	44	4.0
52	6.2	52	5.4
60	8.1	60	7.0
68	10.1	68	8.8
76	12.4	76	10.8

UNIT WEIGHT

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

CHILLER PERFORMANCE

Based on 51.8 GPM load & 64.4 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	21.48	257.79	15.90	16.22	312.03
	80°	20.92	250.98	16.81	14.93	308.33
	85°	20.34	244.02	17.79	13.72	304.72
	90°	19.74	236.89	18.84	12.58	301.16
	95°	19.13	229.54	19.96	11.50	297.66
42°	75°	22.18	266.12	15.97	16.66	320.61
	80°	21.59	259.10	16.88	15.35	316.71
	85°	21.00	251.95	17.86	14.11	312.88
	90°	20.39	244.62	18.91	12.94	309.13
	95°	19.76	237.09	20.03	11.84	305.43
44°	75°	22.53	270.36	16.01	16.89	324.99
	80°	21.94	263.24	16.92	15.56	320.97
	85°	21.33	255.98	17.90	14.30	317.04
	90°	20.71	248.55	18.94	13.12	313.19
	95°	20.08	240.92	20.07	12.01	309.38
45°	75°	22.89	274.66	16.05	17.12	329.41
	80°	22.29	267.43	16.96	15.77	325.29
	85°	21.67	260.06	17.93	14.50	321.25
	90°	21.04	252.53	18.98	13.31	317.29
	95°	20.40	244.80	20.10	12.18	313.38
46°	75°	23.62	283.41	16.13	17.57	338.44
	80°	23.00	275.96	17.03	16.20	334.08
	85°	22.36	268.38	18.01	14.90	329.82
	90°	21.72	260.63	19.05	13.68	325.64
	95°	21.06	252.69	20.17	12.53	321.52
48°	75°	23.99	287.87	16.17	17.81	343.03
	80°	23.36	280.30	17.07	16.42	338.56
	85°	22.72	272.60	18.05	15.10	334.18
	90°	22.06	264.75	19.09	13.87	329.89
	95°	21.39	256.70	20.21	12.70	325.66
50°	75°	24.75	296.95	16.25	18.27	352.40
	80°	24.10	289.14	17.16	16.85	347.68
	85°	23.43	281.22	18.13	15.51	343.07
	90°	22.76	273.13	19.17	14.25	338.54
	95°	22.07	264.86	20.29	13.06	334.08

HEATING PERFORMANCE

Based on 51.8 GPM load and 64.4 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	254.35	18.70	3.99	190.55
	40°	270.10	18.71	4.23	206.28
	50°	304.10	18.73	4.76	240.18
	60°	341.71	18.78	5.33	277.64
	70°	383.34	18.85	5.96	319.01
110°	35°	250.66	21.13	3.48	178.56
	40°	265.90	21.12	3.69	193.85
	50°	298.63	21.10	4.15	226.63
	60°	334.71	21.11	4.65	262.68
	70°	374.50	21.15	5.19	302.35
120°	35°	246.90	23.92	3.03	165.30
	40°	261.65	23.88	3.21	180.17
	50°	293.19	23.82	3.61	211.90
	60°	327.77	23.79	4.04	246.61
	70°	365.80	23.78	4.51	284.67
125°	35°	242.92	27.09	2.63	150.49
	40°	257.21	27.03	2.79	164.98
	50°	287.61	26.93	3.13	195.74
	60°	320.77	26.85	3.50	229.17
	70°	357.09	26.79	3.91	265.67

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

TWO-STAGE

WW420

AQUARIUS SERIES

R-410A

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor (Ea) RLA	Compressor (Ea) LRA	Min. Circuit Ampacity	Max. Fuse Size
208/230-3-60	-3	59.1	425	133.0	190
460-3-60	-4	26.4	187	59.4	80
575-3-60	-5	26	148	58.5	80

FLUID FLOW & PRESSURE DROP

Chilled Fluid Side (@ 55°F)		Cond. Fluid Side (@ 85°F)	
Flow (GPM)	ΔP (FOH)	Flow (GPM)	ΔP (FOH)
50	5.8	50	5.0
60	8.0	60	7.0
70	10.6	70	9.3
80	13.5	80	11.8
90	16.8	90	14.7

UNIT WEIGHT

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

c UL US

CHILLER PERFORMANCE

Based on 68 GPM load and 84.2 GPM source fluid flow.

Leaving Load Fluid (F)	Entering Source. Fluid (F)	Total Capacity (Tons)	Total Capacity (MBtuH)	Power Input (kW)	EER	Heat Rejection (BtuH)
40°	75°	27.95	335.40	21.46	15.63	408.61
	80°	27.19	326.23	22.61	14.43	403.37
	85°	26.41	316.89	23.88	13.27	398.36
	90°	25.61	307.38	25.26	12.17	393.55
	95°	24.81	297.67	26.74	11.13	388.92
42°	75°	28.97	347.61	21.58	16.11	421.23
	80°	28.18	338.13	22.71	14.89	415.63
	85°	27.37	328.47	23.97	13.70	410.26
	90°	26.55	318.63	25.34	12.57	405.09
	95°	25.72	308.59	26.83	11.50	400.12
44°	75°	29.49	353.85	21.64	16.35	427.69
	80°	28.68	344.21	22.77	15.12	421.90
	85°	27.87	334.38	24.02	13.92	416.34
	90°	27.03	324.37	25.39	12.78	411.00
	95°	26.18	314.16	26.87	11.69	405.84
45°	75°	30.01	360.17	21.71	16.59	434.25
	80°	29.20	350.37	22.83	15.35	428.27
	85°	28.37	340.38	24.07	14.14	422.52
	90°	27.52	330.20	25.44	12.98	416.99
	95°	26.65	319.81	26.92	11.88	411.65
46°	75°	31.09	373.10	21.85	17.07	447.67
	80°	30.25	362.96	22.96	15.81	441.29
	85°	29.39	352.63	24.19	14.58	435.15
	90°	28.51	342.10	25.54	13.40	429.24
	95°	27.61	331.36	27.01	12.27	423.52
48°	75°	31.64	379.71	21.93	17.31	454.53
	80°	30.78	369.39	23.02	16.04	447.95
	85°	29.91	358.89	24.25	14.80	441.6
	90°	29.01	348.18	25.59	13.61	435.50
	95°	28.10	337.26	27.06	12.46	429.59
50°	75°	32.77	393.19	22.10	17.80	468.58
	80°	31.88	382.53	23.17	16.51	461.58
	85°	30.97	371.67	24.37	15.25	454.83
	90°	30.05	360.59	25.71	14.03	448.30
	95°	29.11	349.30	27.17	12.86	441.99

HEATING PERFORMANCE

Based on 68 GPM load and 84.2 GPM source fluid flow

Leaving Load Fluid (F)	Entering Source Fluid (F)	Heating Capacity (MBtuH)	Power Input (kW)	COP	Heat of Absorb. (MBtuH)
100°	35°	328.13	25.18	3.82	242.21
	40°	350.02	25.16	4.08	264.18
	50°	398.09	25.12	4.64	312.39
	60°	452.59	25.17	5.27	366.72
	70°	514.34	25.40	5.94	427.69
110°	35°	324.39	28.31	3.36	227.78
	40°	345.32	28.31	3.57	248.72
	50°	391.12	28.26	4.06	294.71
	60°	442.89	28.22	4.60	346.61
	70°	501.46	28.28	5.20	404.95
120°	35°	321.01	31.78	2.96	212.58
	40°	341.02	31.83	3.14	232.41
	50°	384.63	31.84	3.54	276.01
	60°	433.74	31.78	4.00	325.32
	70°	489.20	31.75	4.52	380.86
125°	35°	317.86	35.57	2.62	196.48
	40°	336.98	35.72	2.77	215.12
	50°	378.46	35.84	3.09	256.17
	60°	424.98	35.83	3.48	302.71
	70°	477.39	35.78	3.91	355.30

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