CAPACITY: 25 - 206 TR

Air Cooled
CHILLER

PRODUCT DATA BOOK

Company Business

Awal Gulf Manufacturing, located at Bahrain is the one of the leading manufacturers of air conditioning and refrigeration products in Middle East Region. We have Air Conditioners ranging from Window AC, Freestanding, Wall Mounted, Flexi Line, Cassette, Multi Split, Inverter type, Central Air Conditioner Units of varying capacity.

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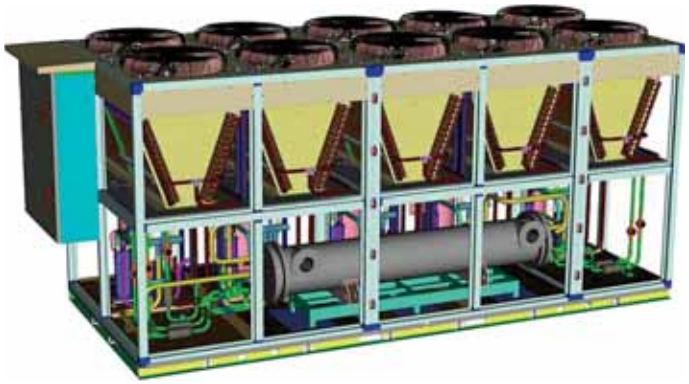
INTRODUCTION

Air cooled package chillers have been developed & produced by **AGMCO** to provide not only the optimum performance, but also to guarantee long & trouble free operations.

Herein lies the reason for the Choice of only the highest quality components and design strategies to meet the most important objectives such as,

- Efficiency
- Reliability
- Flexibility
- Easy Installability
- Serviceability
- Affordability



Chillers are designed, manufactured and shipped as a complete package which are run tested at factory before dispatch.

A wide range of chiller capacities and options available with Refrigerant R407C, R410A, R22 both 50 Hz & 60 Hz operation.

Microprocessor based chiller controller effectively manages the operation of chiller at different conditions.

SALIENT FEATURES

The units are suitable for mounting on the roof or on the ground. All units are factory assembled, piped, internally wired and fully charged with R407C/R410A/R22. These units are tested in accordance with ARI standards. The units are available in the following voltages:

3/420-380PH/50HZ
3/380PH/60HZ
3/230-208PH/60HZ

All components are mounted in a weather resistant Frame structure.

COMPRESSOR

Compressors are fully hermetic-scroll type designed for high efficiency provided with standard control and safety devices like HP & LP controls and crank case heater for scroll and reciprocating compressors.

AIR COOLED CONDENSER

Air cooled condenser coils are designed to deliver their duties with optimum performance for all design conditions. Coils are manufactured from seamless inner grooved copper tubes mechanically expanded into aluminum fins. All coils are air pressure at 450 psi, under water to avoid leakage. They also undergo dry chemical cleaning after manufacturing for optimum system cleanness. Type-L heavy wall seamless copper tubes are provided for coil headers. The condenser coils are hydrostatic pressure tested in accordance with the UL 1995 standard.

CONDENSER PROPELLER FANS

All condenser fans are of the propeller, axial type, which is directly mounted on the motors shaft .All fans run approximately 1100/900 RPM (60/50Hz), for optimum fan efficiency and maximum sound power reduction. Fan blades are made from coated steel or aluminum for maximum corrosion resistance, and are statically and dynamically balanced before insulation. Thermal current protection, class-"F" insulation and IP55. All motors are IEC certified. All condenser fans are equipped with epoxy coated wire guard.

THERMOSTATIC EXPANSION VALVE / metering device provides precision control for maximized cooling.

• The units are completely factory wired with single point power input.
• Easy accessible control box, compressor, controls
• Primary control circuit is designed to operate at 24 volts. Control circuit 230 volts can be given as an option
• All the units are provided with compressor lockout either by locking relays or by high pressure control trip with manual reset switch.
• All the units are provided with 3- 2.5 min time delay for compressor start
• Units are provided with efficient PHE's or Shell and tube evaporators with T/S
• Quality Assurance
• All chillers are run tested at factory prior to dispatch
• Produced in ISO2000-9001 listed manufacturing facility
• Designed & rated to the conditions as per ARI standards

COMPACT SIZING:

- Chillers are made in compact foot print
- Aluminum profile construction is unique feature of Awal Gulf chiller design
- Sheet metal frame construction can also be provided as optional

STANDARD FEATURES:

- Corrosion free profile construction
- Modular design gives greater flexibility
- Easily accessible system components
- Multiple compressor design, gives control over different load conditions
- Units are fitted with Scroll compressor with anti-vibration mounts
- Refrigeration circuit complete with TEX valve, replaceable drier, sight glass, etc.
- Compressor and fan motor provided with overload relays for protection
- Cool only model is standard option
- HP/LP switches provided as protection for the system

Model Decoding

5	CPA	206	G	C	8	S	AA
BASIC (SERIES)	CPA: Chiller Package Air	UNIT SIZE (NOMINAL CAPACITY) 25 30 34 40 46 52 59 68 79 91 103 119 131 143 155 171 182 194 206	ELECTRICAL SUPPLY (V-Ph, - Hz) G: (380/415-3-50Hz) T: 9220-3-(60Hz) E: (380-3-60Hz) K: (460-3-6-Hz)	COOLING/ HEATING C: COOLING H: HEATING	NO. OF COMPRESSORS 2 4 6 8	COMPRESSOR TYPE S: SCROLL	FACTOR AA: Basic AT: Tandem AS: Swim pool

OPTIONAL FEATURES

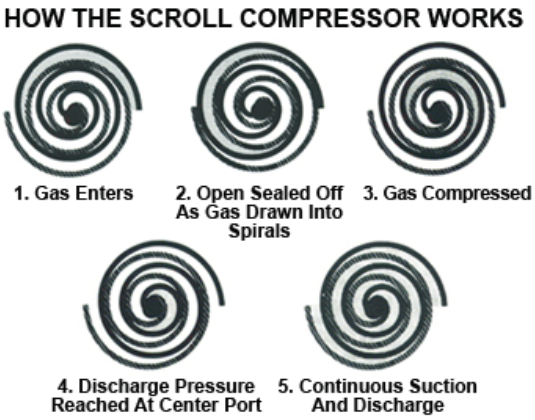
- ANTI CORROSIVE COATED FINS FOR CONDENSER COILS
- STAINLESS STEEL HEAT EXCHANGERS FOR SPECIAL APPLICATIONS
- COPPER FINS FOR CONDENSER
- PHASE LOSS PROTECTION
- FAN SPEED CONTROLLER
- FAN CYCLING SWITCH
- COMPRESSOR ALTERNATING SWITCH
- COMPRESSOR INTERLOCK WITH PUMP (OTHERS)
- PUMP DOWN SYSTEM
- OVER LOAD THERMAL PROTECTION FOR COMPRESSOR
- OVER LOAD THERMAL PROTECTION FOR MOTORS
- VOLT FREE CONTACTS FOR BMS
- DUAL AND ADJUSTABLE PRESSURE SWITCHES
- PUMP DOWN CONTROL
- HOT GAS BYPASS FOR CAPACITY REGULATION
- PLATE HEAT EXCHANGER AS OPTIONAL CAN BE GIVEN FOR SPECIAL APPLICATION
- HIGH ΔT COOLER
- HEAVY DUTY DUST PROOF (IP 55) ELECTRICAL PANEL AVAILABLE FOR SPECIFIC MODELS
- PROTECTIVE GRILL CAN BE GIVEN FOR COMPRESSOR AND CONDENSER SECTION AS OPTIONAL
- HP/LP GAUGES CAN BE PROVIDED AS OPTIONAL

Scroll Compressor

How Scroll Compressors Work

The compressor has one scroll, or spiral, orbiting in a path defined by a matching fixed scroll. The fixed scroll is attached to the compressor body.

The orbiting scroll is coupled to the crankshaft and orbits, rather than rotates. The orbiting motion creates a series of gas pockets traveling between the two scrolls. On the outer portion of the scrolls, the pockets draw in gas, and then move into the center of the scroll, where the gas is discharged. As the gas moves into the increasingly smaller inner pockets, the temperature and pressure increase to the desired discharge pressure.



Design Benefits

Better Liquid Handling
Radial compliance allows the scroll members to separate in the presence of liquid refrigerant, thus, providing protection against liquid damage.

Greater Efficiency
With axial compliance, optimized force between two scrolls can be obtained, leading to high efficiency over the entire operating range.

Improved Sound and Vibration
The system operates at lower sound level and better sound quality. Vibration level is

also improved due to lower discharge gas pulse compared with traditional compressors.

Unmatched Reliability

- 70% fewer moving parts
- Ability to start under any system load, without start components
- Easy to service and maintain due to their compact size and lightweight, simple design
- Engineered for optimum performance with today's chlorine-free refrigerants
- No complex internal suction and discharge valves for quieter operation and higher reliability

Refrigeration Scroll Compressors

Scroll technology has inherent advantages compared to the technology of reciprocating compressors. The distinct scroll pockets in a scroll compression mechanism eliminate the need for suction valve. The continuous compression (scroll compressor), compared to the pulsating compression process (reciprocating compressor) eliminates the need for mufflers in the suction and discharge gas. The combined effect is superior efficiency as it eliminates pressure losses occurring on the valves and mufflers. The design minimizes the leakage across successive high pressure pockets, further enhancing compressor efficiency.

Scroll compressors have higher volumetric efficiency. The effect is a much flatter capacity delivery across wide outdoor ambient conditions. This enables a relatively smaller-sized compressor to deliver the cooling demand at the worst summer days. In lower ambient nights, scroll compressors enable the system to be more balanced, allowing overall savings in electrical power consumption.

Reliability

Scroll compressors are known for their reliability. What makes them so reliable? Patented design features:

- 70 percent fewer moving parts
- Ability to start under any system load
- Compact, light-weight design
- No complex internal suction and discharge valves

Tandem Compressor

Models 5CPA131 to 5CPA206 use Tandem Scroll Compressors. Tandem scroll compressors make possible great flexibility in system design for a wide range of applications. Since each compressor may be operated individually, this design provides simple, capacity reduction & maximum power savings and greatly simplifies system control. In any well designed system, this kind of design offers a much greater factor of redundancy than a single compressor and provides emergency protection for the product. In addition to greater reliability, one great advantage of the multiple compressor design over other large horsepower compressors is the fact that in the event of compressor damage, replacement of either compressor in the tandem can be easily done.

Design of multiple compressor units

Tandem compressors consist of two compressors respectively, which can be equal or of different size models. They offer advantages over single compressors with equivalent capacity:

- Efficient capacity control - through cycling one or two compressors
- Increased reliability - fewer starts/stops than a single large compressor
- Reduced load starting, whereby individual compressors in Tandem can be started with time delay
- Redundancy - part load capacity if one compressor fails, reduced replacement costs

Compressors used in Tandem have to be solid mounted by use of steel spacers on two rigid rails to build a unit. The reason for the solid mounting is to keep stresses in the tubing connecting the compressors at reasonable levels. The compressors should be mounted as close as possible to each other so as to keep the gas-oil equalization line as short as possible. The shorter the line, the better the oil/gas equalization. The unit rails should then be bolted to the installation base through anti-vibration mounts. The unit should be installed level to ensure proper equalization between the compressors. Install flexible hoses or vibration absorbers to connect the suction and discharge tubing to the system. It is recommended that the unit is controlled in a way that the compressors alternate being the lead compressor.

This will ensure an even life for the compressors and give optimum reliability for the unit. It will also prevent an undesirable situation where a compressor is idle for long periods during time of low load operation.

With increasing cooling capacity usually the pipe work becomes more complex. In this case the installation of an oil separator may be recommended.

Controls

The controls of a unit comply with the following specifications:

- Any sequence of start/stop combination of compressors is allowed.
- For each individual compressor, the maximum number of starts is 10/hour.
- It is recommended to wait 5 seconds before starting or stopping another compressor.
- It is recommended not to start or stop 2 or 3 compressors together.

CAPACITY CONTROL

Scroll water chillers incorporate stepped load shedding as required by most energy management systems. Modulation of capacity in response to system load requirements is affected by the microprocessor controller which monitors the leaving water temperature.

Capacity control is achieved by cycling compressors ON/OFF and sequential operation of compressors which provides optimal part load capacities for chillers with multiple compressors.

See the following table for the standard and optional capacity control for each unit.

MODEL	NO. COMP	% FULL LOAD CAPACITY CONTROL
5CPA025	2	100-OFF
5CPA030	2	100-OFF
5CPA034	2	100-OFF
5CPA040	2	100-OFF
5CPA046	2	100-OFF
5CPA052	2	100-OFF
5CPA059	2 -T	25-50-75-100-OFF
5CPA068	2 -T	25-50-75-100-OFF
5CPA079	2 -T	25-50-75-100-OFF
5CPA091	2 -T	25-50-75-100-OFF
5CPA103	2 -T	25-50-75-100-OFF
5CPA119	3 -T	16-33-49-66-83-100-OFF
5CPA131	3 -T	16-33-49-66-83-100-OFF
5CPA143	3 -T	16-33-49-66-83-100%-OFF
5CPA155	3 -T	16-33-49-66-83-100%-OFF
5CPA171	4 -T	12-24-36-48-60-72-90-100-OFF
5CPA182	4 -T	12-24-36-48-60-72-90-100-OFF
5CPA194	4 -T	12-24-36-48-60-72-90-100-OFF
5CPA206	4 -T	12-24-36-48-60-72-90-100-OFF

Shell and Tube Evaporator

Performance and features

- Optimized for R407C/R410A/R22 high-efficiency in water-cooled chillers
- Designed to match scroll R407C/R410A/R22 compressors
- Meets high efficiency demands as well as severe environmental standards
- Tubes ensure safe oil return, even for the most viscous oils
- Compact Heat Exchanger design
- Extractable tube bundle
- Integrated square support version avoiding need for additional mounting feet
- Different baffle distances

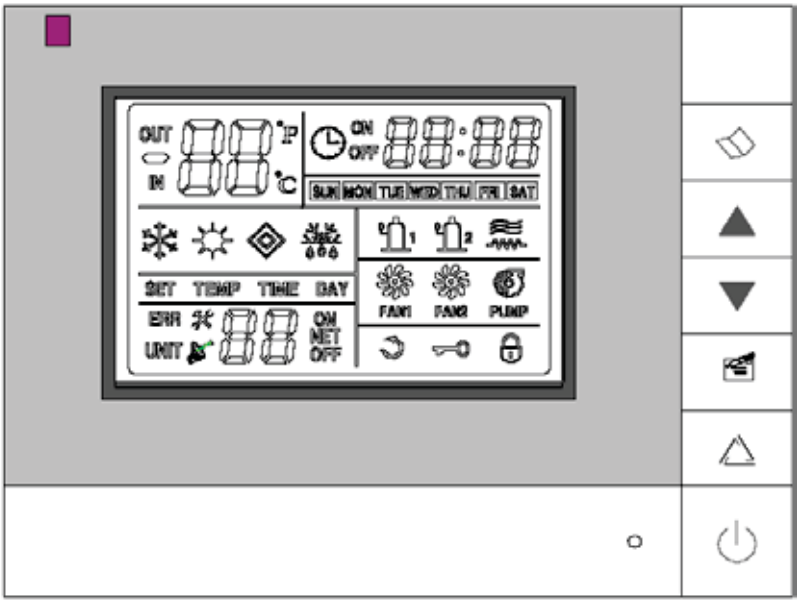
Refrigerant efficiency

Compared with other refrigerants used frequently, R407C/R410A/R22 offers excellent performance. Evaporators designed specifically to maximize the benefits of using highly effective refrigerant.

Controller

For chillers up to 2 compressors

The wall pad controller equips with multi color backlighting LCD display. Supports the following functions:



- Mode-Cool, Heat
- Independent temperature setting for cool mode and heat mode respectively
- Inlet/outlet water temperature display
- Real time clock display
- Real time On/Off setting [Monday to Sunday]
- Manual defrost
- Key lock function
- Control parameter setting
- Auto restart or default off upon power up
- Remote on/off
- Non volatile memory to keep the system setting
- Multi color black lighting
- Multi error code read out
- Buzzer beeping
- Infra red wireless remote control
- Real time clock operation backup by battery during power off

For chillers up to 6 compressors

The wall pad controller equips with multi color backlighting LCD display. Supports the following functions:

- ON/OFF
- Defrost
- Auto defrost mode
- Manual defrost mode
- Auxiliary electric heater
- Auto anti-freeze
- Liquid valve
- Compressor controls and load balancing
- Protection control
- Remote connection
- Manual Control
- Display: date, time; Entering/Leaving water temperature, Hot water temperature (When applicable); Mode of operation (COOL, HEAT); Water pump status ; System ON/OFF status.
- User set parameter
- Mode of operation
- System timer
- User password setting
- System model setting
- Maintenance password setting
- Manufacturer parameter setting
- Manufacturer info
- Error info
- Password protection

For chillers up to 8 compressors

The wall pad controller equips with multi color backlighting LCD display. Supports the following functions:

- ON/OFF
- Defrost
- Auto defrost mode
- Manual defrost mode
- Auxiliary electric heater
- Auto anti-freeze
- Liquid valve
- Compressor controls and load balancing
- Protection control
- Remote connection
- Manual Control
- Display: date, time; Entering/Leaving water temperature, Hot water temperature (When applicable); Mode of operation (COOL ,HEAT); Water pump status; System ON/OFF status.
- User set parameter
- Mode of operation
- System timer
- User password setting
- System model setting
- Maintenance password setting
- Manufacturer parameter setting
- Manufacturer info
- Error info
- Password protection
- Local access through Rs232 or Ethernet communication
- Remote access through remote modem communication
- BMS control through third party communication protocol (ModBus, Bacnet etc.)
- Status indications for Compressor, Fan, 4Way Valve etc.
- Compressor current indications
- Over current and under current trip
- Pressure value display
- Low pressure trip and high pressure
- Safety trip indication with time and 30 seconds back log
- Tonnage indication with demand and actual load
- Automatic defrost functions
- Hot gas bypass control

Specification

UNIT SIZE (TR)		25	30	34	40	46	52	59
Capacity KW		88	105	120	141	162	183	207
COMPRESSOR								
Power supply		380-415-3-50						
NUMBER OF COMPRESSORS		2	2	2	2	2	2	3
NUMBER OF CIRCUITS		2	2	2	2	2	2	3
REFRIGERANT		R407C / R410A / R22						
Power Consumption KW	R407C	24.6	28.6	32.5	40.4	44.3	48.2	60.6
	R410A	24.6	28.2	32	39.4	45.4	51.4	59.1
	R22	25	28.7	32.7	40.4	44.8	49.2	60.6
EXPANSION VALVE		THERMOSTATIC						
CONTROL VOLTAGE		220V-1Ph-50Hz						
CONDENSER								
CONDENSER COIL Tube DIA		3/8	3/8	3/8	3/8	3/8	3/8	3/8
Rows		4	4	4	4	4	4	4
Fins per inch		14	14	14	14	14	14	14
Total face area, Sq. ft.		28.4	28.4	28.4	56.8	56.8	56.8	85.2
AIRFLOW, CFM		15000	18000	18000	27600	27600	27600	40800
NUMBER OF FAN/FAN DIA 760 mm		2	2	2	4	4	4	6
Motor KW		2.2	2.2	2.2	4.5	4.5	4.5	6.7
Motor rpm		960						
COOLER								
SHELL DIAMETER, mm		220	220	273	273	273	273	325
LENGTH, mm		1606	1856	1856	1856	2110	2110	2110
WATER IN/OUT PIPE DIA.mm		2-1/2"	2-1/2"	3"	3"	3"	3"	3"
Water flow rate GPM		60	72	81.6	96	110	125	142
GENERAL								
SHIPPING /OPERATING WEIGHTS kg		1030	1094	1130	1954	1964	1980	2470
Dimensions								
Height mm		1620	1620	1620	2300	2300	2300	2300
Depth mm		2480	2480	2480	2450	2450	2450	2900
Width mm		1110	1110	1110	2200	2200	2200	2250

Notes:

1-Capacity and power rating are nominal and based on ASHRAE STD conditions.

2- As a result of continuous development and research, design and specifications are subject to change without notice.

Specification

UNIT SIZE (TR)		68	79	91	103	119	131
Capacity KW		239	278	320	362	418	461
COMPRESSOR							
Power supply		380-415-3-50					
NUMBER OF COMPRESSORS		3	3	4	4	5	3 -T
NUMBER OF CIRCUITS		3	3	4	4	5	3
REFRIGERANT		R407C / R410A / R22					
Power Consumption KW	R407C	64.5	72.3	88.6	96.4	120.5	125
	R410A	67.3	77.1	90.8	102.8	128.5	131
	R22	65.4	73.8	89.6	98.4	123	127.1
EXPANSION VALVE		THERMOSTATIC					
CONTROL VOLTAGE		220V-1Ph-50Hz					
CONDENSER							
CONDENSER COIL Tube DIA		3/8	3/8	3/8	3/8	3/8	3/8
Rows		4	4	4	4	4	4
Fins per inch		14	14	14	14	14	14
Total face area, Sq. ft.		85.2	85.2	113.6	113.6	142	170.4
AIRFLOW, CFM		40800	54600	54600	54600	71400	85800
NUMBER OF FAN/FAN DIA 760 mm		6	6	8	8	10	12
Motor KW		6.7	6.7	8.9	8.9	11.2	13.4
Motor rpm		960					
COOLER							
SHELL DIAMETER, mm		325	325	325	325	402	402
LENGTH, mm		2110	2510	2510	2510	2543	2543
WATER IN/OUT PIPE DIA.mm		3"	4"	4"	4"	5"	5"
Water flow rate GPM		163	190	218	247	286	314
GENERAL							
SHIPPING /OPERATING WEIGHTS kg		2478	2512	3060	3172	4560	5220
Dimensions							
Height mm		2300	2300	2300	2300	2300	2300
Depth mm		2900	2900	3900	3900	4825	5850
Width mm		2250	2250	2200	2200	2262	2200

Notes:

1-Capacity and power rating are nominal and based on ASHRAE STD conditions.

2- As a result of continuous development and research, design and specifications are subject to change without notice.

Specification

UNIT SIZE (TR)		143	155	171	182	194	206
Capacity KW		503	545	601	640	682	724
COMPRESSOR							
Power supply		380-415-3-50					
NUMBER OF COMPRESSORS		3-T	3-T	4-T	4-T	4-T	4-T
NUMBER OF CIRCUITS		3	3	4	4	4	4
REFRIGERANT		R407C / R410A / R22					
Power Consumption KW	R407C	136.8	144.6	165.4	177.2	188.9	192.8
	R410A	144.4	154.2	170.4	183.8	199.6	205.6
	R22	139.2	147.6	167.5	179.6	192.4	196.8
EXPANSION VALVE		THERMOSTATIC					
CONTROL VOLTAGE		220V-1Ph-50Hz					
CONDENSER							
CONDENSER COIL Tube DIA		3/8	3/8	3/8	3/8	3/8	3/8
Rows		4	4	4	4	4	4
Fins per inch		14	14	14	14	14	14
Total face area, Sq. ft.		170.4	170.4	227.2	227.2	227.2	227.2
AIRFLOW, CFM		85800	85800	116400	116400	116400	116400
NUMBER OF FAN/FAN DIA 760 mm		12	12	16	16	16	16
Motor KW		13.4	13.4	17.9	17.9	17.9	17.9
Motor rpm		960					
COOLER							
SHELL DIAMETER, mm		402	402	452	452	452	452
LENGTH, mm		2543	2543	2550	2550	3150	3150
WATER IN/OUT PIPE DIA.mm		5"	5"	6"	6"	6"	6"
Water flow rate GPM		343	372	410	437	466	494
GENERAL							
SHIPPING /OPERATING WEIGHTS kg		5280	5300	6226	6240	7526	7544
Dimensions							
Height mm		2300	2300	2300	2300	2300	2300
Depth mm		5850	5850	7200	7200	7800	7800
Width mm		2200	2200	2200	2200	2200	2200

Notes:

1-Capacity and power rating are nominal and based on ASHRAE STD conditions.

2- As a result of continuous development and research, design and specifications are subject to change without notice.

R410A - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA025	40	21.9	25.3	52.6	21.1	26.4	50.5	20.2	27.5	48.5	19.4	28.6	46.6	18.6	29.7	44.7
	42	22.8	25.5	54.7	21.9	26.5	52.6	21.1	27.6	50.5	20.2	28.7	48.5	19.4	29.8	46.6
	44	23.8	25.6	57.0	22.8	26.7	54.8	21.9	27.7	52.6	21.1	28.8	50.5	20.2	30.0	48.5
	45	24.8	25.7	59.4	23.8	26.8	57.1	22.8	27.9	54.8	21.9	29.0	52.6	21.1	30.1	50.5
	46	25.7	25.9	61.8	24.8	26.9	59.4	23.8	28.0	57.0	22.8	29.1	54.7	21.9	30.3	52.6
	48	26.8	26.0	64.3	25.7	27.1	61.8	24.7	28.2	59.3	23.7	29.3	56.9	22.8	30.4	54.7
	50	27.8	26.1	66.8	26.8	27.2	64.3	25.7	28.3	61.7	24.7	29.4	59.2	23.7	30.6	56.8
5CPA030	40	25.2	28.7	60.5	24.2	29.9	58.2	23.3	31.1	55.9	22.3	32.4	53.6	21.4	33.7	51.5
	42	26.3	28.9	63.0	25.3	30.1	60.6	24.2	31.3	58.2	23.3	32.6	55.9	22.3	33.9	53.6
	44	27.4	29.0	65.7	26.3	30.2	63.1	25.3	31.5	60.6	24.2	32.7	58.2	23.3	34.0	55.9
	45	28.5	29.2	68.4	27.4	30.4	65.8	26.3	31.6	63.1	25.3	32.9	60.6	24.2	34.2	58.2
	46	29.6	29.3	71.1	28.5	30.6	68.4	27.4	31.8	65.7	26.3	33.0	63.0	25.2	34.4	60.5
	48	30.8	29.5	74.0	29.6	30.7	71.1	28.5	31.9	68.3	27.3	33.2	65.5	26.2	34.5	62.9
	50	32.1	29.6	76.9	30.8	30.9	74.0	29.6	32.1	71.0	28.4	33.4	68.2	27.3	34.7	65.4
5CPA034	40	28.9	32.3	69.3	27.8	33.7	66.7	26.7	35.0	64.0	25.6	36.4	61.4	24.6	37.9	59.0
	42	30.1	32.5	72.2	28.9	33.9	69.5	27.8	35.2	66.7	26.7	36.6	64.0	25.6	38.1	61.4
	44	31.3	32.7	75.2	30.1	34.0	72.3	28.9	35.4	69.5	27.8	36.8	66.7	26.7	38.3	64.0
	45	32.7	32.8	78.4	31.4	34.2	75.4	30.1	35.6	72.3	28.9	37.0	69.5	27.8	38.5	66.7
	46	34.0	33.0	81.5	32.7	34.4	78.4	31.3	35.7	75.2	30.1	37.2	72.2	28.9	38.7	69.3
	48	35.3	33.2	84.8	34.0	34.5	81.5	32.6	35.9	78.2	31.3	37.4	75.1	30.0	38.9	72.1
	50	36.7	33.3	88.2	35.3	34.7	84.8	33.9	36.1	81.4	32.6	37.5	78.1	31.2	39.1	75.0
5CPA040	40	35.9	41.5	86.1	34.5	43.2	82.8	33.1	45.0	79.5	31.8	46.8	76.3	30.5	48.6	73.3
	42	37.4	41.7	89.7	35.9	43.5	86.3	34.5	45.2	82.8	33.1	47.0	79.5	31.8	48.9	76.3
	44	38.9	41.9	93.5	37.4	43.7	89.9	35.9	45.4	86.3	34.5	47.2	82.8	33.1	49.1	79.5
	45	40.6	42.1	97.3	39	43.9	93.6	37.4	45.7	89.9	35.9	47.5	86.3	34.5	49.4	82.8
	46	42.2	42.4	101.2	40.6	44.1	97.3	38.9	45.9	93.5	37.4	47.7	89.7	35.9	49.6	86.1
	48	43.9	42.6	105.3	42.2	44.3	101.2	40.5	46.1	97.2	38.9	48.0	93.3	37.3	49.9	89.6
	50	45.6	42.8	109.5	43.9	44.6	105.3	42.1	46.3	101.1	40.4	48.2	97.0	38.8	50.1	93.2
5CPA046	40	41.1	47.2	98.7	39.5	49.2	94.9	38.0	51.1	91.1	36.4	53.2	87.5	35.0	55.3	84.0
	42	42.8	47.4	102.8	41.2	49.4	98.9	39.5	51.4	94.9	38.0	53.4	91.1	36.4	55.6	87.5
	44	44.6	47.7	107.1	42.9	49.7	103.0	41.2	51.6	98.9	39.5	53.7	94.9	38.0	55.9	91.1
	45	46.5	47.9	111.6	44.7	49.9	107.3	42.9	51.9	103.0	41.2	54.0	98.9	39.5	56.1	94.9
	46	48.3	48.1	116.0	46.5	50.1	111.6	44.6	52.2	107.1	42.8	54.2	102.8	41.1	56.4	98.7
	48	50.3	48.4	120.7	48.3	50.4	116.0	46.4	52.4	111.4	44.6	54.5	106.9	42.8	56.7	102.7
	50	52.3	48.6	125.5	50.3	50.7	120.7	48.3	52.7	115.8	46.3	54.8	111.2	44.5	57.0	106.8

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R410A - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA052	40	46.4	52.9	111.3	44.6	55.1	107.0	42.8	57.3	102.7	41.1	59.6	98.6	39.5	61.9	94.7
	42	48.3	53.1	115.9	46.4	55.3	111.5	44.6	57.6	107.0	42.8	59.9	102.7	41.1	62.3	98.6
	44	50.3	53.4	120.8	48.4	55.6	116.1	46.4	57.8	111.5	44.6	60.2	107.0	42.8	62.6	102.7
	45	52.4	53.7	125.8	50.4	55.9	121.0	48.4	58.1	116.1	46.4	60.5	111.5	44.6	62.9	107.0
	46	54.5	53.9	130.8	52.4	56.2	125.8	50.3	58.4	120.8	48.3	60.8	115.9	46.4	63.2	111.3
	48	56.7	54.2	136.1	54.5	56.5	130.8	52.3	58.7	125.6	50.2	61.1	120.6	48.2	63.5	115.8
	50	59.0	54.5	141.5	56.7	56.7	136.1	54.4	59.0	130.6	52.2	61.4	125.4	50.2	63.8	120.4
5CPA059	40	53.8	62.2	129.2	51.8	64.8	124.2	49.7	67.4	119.2	47.7	70.1	114.5	45.8	72.9	109.9
	42	56.1	62.5	134.6	53.9	65.1	129.4	51.8	67.7	124.2	49.7	70.5	119.2	47.7	73.3	114.5
	44	58.4	62.9	140.2	56.2	65.5	134.8	53.9	68.1	129.4	51.8	70.8	124.2	49.7	73.6	119.2
	45	60.8	63.2	146.0	58.5	65.8	140.4	56.2	68.4	134.8	53.9	71.2	129.4	51.8	74.0	124.2
	46	63.3	63.5	151.9	60.8	66.1	146.0	58.4	68.8	140.2	56.1	71.5	134.6	53.8	74.4	129.2
	48	65.8	63.8	157.9	63.3	66.5	151.9	60.7	69.1	145.8	58.3	71.9	140.0	56.0	74.8	134.4
	50	68.4	64.1	164.2	65.8	66.8	157.9	63.2	69.5	151.6	60.6	72.2	145.5	58.2	75.1	139.7
5CPA068	40	60.6	70.0	145.5	58.3	72.9	139.9	56.0	75.8	134.3	53.7	78.8	129.0	51.6	82.0	123.8
	42	63.2	70.3	151.6	60.7	73.3	145.8	58.3	76.2	139.9	56.0	79.2	134.3	53.7	82.4	129.0
	44	65.8	70.7	157.9	63.3	73.6	151.8	60.7	76.6	145.8	58.3	79.6	139.9	56.0	82.8	134.3
	45	68.5	71.0	164.5	65.9	74	158.2	63.3	77.0	151.8	60.7	80.0	145.8	58.3	83.2	139.9
	46	71.3	71.4	171.1	68.5	74.4	164.5	65.8	77.3	157.9	63.2	80.4	151.6	60.6	83.7	145.5
	48	74.1	71.8	177.9	71.3	74.7	171.1	68.4	77.7	164.2	65.7	80.8	157.7	63.1	84.1	151.3
	50	77.1	72.1	185.0	74.1	75.1	177.9	71.2	78.1	170.8	68.3	81.2	164.0	65.6	84.5	157.4
5CPA079	40	69.6	79.2	166.9	66.9	82.5	160.5	64.2	85.9	154.1	61.6	89.3	147.9	59.2	92.9	142.0
	42	72.5	79.6	173.9	69.7	83.0	167.2	66.9	86.3	160.5	64.2	89.7	154.1	61.6	93.3	147.9
	44	75.5	80.0	181.1	72.6	83.4	174.2	69.7	86.7	167.2	66.9	90.2	160.5	64.2	93.8	154.1
	45	78.6	80.4	188.7	75.6	83.8	181.4	72.6	87.2	174.2	69.7	90.6	167.2	66.9	94.3	160.5
	46	81.8	80.9	196.2	78.6	84.2	188.7	75.5	87.6	181.1	72.5	91.1	173.9	69.6	94.7	166.9
	48	85.0	81.3	204.1	81.8	84.6	196.2	78.5	88.0	188.4	75.4	91.5	180.9	72.3	95.2	173.6
	50	88.4	81.7	212.3	85.0	85.1	204.1	81.6	88.5	195.9	78.4	92.0	188.1	75.2	95.7	180.6
5CPA091	40	82.3	94.3	197.4	79.1	98.2	189.8	75.9	102.1	182.2	72.9	106.2	174.9	70.0	110.5	167.9
	42	85.7	94.8	205.6	82.4	98.7	197.7	79.1	102.7	189.8	75.9	106.8	182.2	72.9	111.0	174.9
	44	89.3	95.2	214.2	85.8	99.2	206.0	82.4	103.2	197.7	79.1	107.3	189.8	75.9	111.6	182.2
	45	93.0	95.7	223.1	89.4	99.7	214.6	85.8	103.7	206.0	82.4	107.8	197.7	79.1	112.1	189.8
	46	96.7	96.2	232.1	93.0	100.2	223.1	89.3	104.2	214.2	85.7	108.4	205.6	82.3	112.7	197.4
	48	100.6	96.7	241.4	96.7	100.7	232.1	92.8	104.7	222.8	89.1	108.9	213.9	85.5	113.3	205.3
	50	104.6	97.2	251.0	100.6	101.2	241.4	96.5	105.3	231.7	92.7	109.5	222.4	89.0	113.8	213.5

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R410A - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA103	40	92.7	105.6	222.6	89.2	110.0	214.0	85.6	114.4	205.5	82.2	119.0	197.3	78.9	123.8	189.4
	42	96.6	106.2	231.9	92.9	110.6	223.0	89.2	115.0	214.0	85.6	119.6	205.5	82.2	124.4	197.3
	44	100.6	106.7	241.5	96.8	111.1	232.2	92.9	115.6	223.0	89.2	120.2	214.0	85.6	125.0	205.5
	45	104.8	107.2	251.6	100.8	111.7	241.9	96.8	116.2	232.2	92.9	120.8	223.0	89.2	125.6	214.0
	46	109.0	107.8	261.7	104.8	112.3	251.6	100.6	116.7	241.5	96.6	121.4	231.9	92.7	126.3	222.6
	48	113.4	108.3	272.1	109.0	112.8	261.7	104.7	117.3	251.2	100.5	122.0	241.1	96.5	126.9	231.5
	50	117.9	108.8	283.0	113.4	113.4	272.1	108.9	117.9	261.2	104.5	122.6	250.8	100.3	127.5	240.8
5CPA119	40	115.9	132.1	278.2	111.5	137.6	267.5	107.0	143.1	256.8	102.7	148.8	246.6	98.6	154.8	236.7
	42	120.8	132.8	289.8	116.1	138.3	278.7	111.5	143.8	267.5	107.0	149.6	256.8	102.7	155.6	246.6
	44	125.8	133.4	301.9	121.0	139.0	290.3	116.1	144.6	278.7	111.5	150.3	267.5	107.0	156.4	256.8
	45	131.0	134.1	314.5	126	139.7	302.4	121.0	145.3	290.3	116.1	151.1	278.7	111.5	157.1	267.5
	46	136.3	134.8	327.1	131.0	140.4	314.5	125.8	146.0	301.9	120.8	151.9	289.8	115.9	157.9	278.2
	48	141.7	135.5	340.2	136.3	141.1	327.1	130.8	146.7	314.0	125.6	152.6	301.4	120.6	158.7	289.4
	50	147.4	136.1	353.8	141.7	141.8	340.2	136.1	147.5	326.6	130.6	153.4	313.5	125.4	159.5	301.0
5CPA131	40	118.0	136.6	283.1	113.4	142.2	272.2	108.9	147.9	261.3	104.5	153.9	250.9	100.3	160.0	240.8
	42	122.9	137.2	294.9	118.1	143.0	283.6	113.4	148.7	272.2	108.9	154.6	261.3	104.5	160.8	250.9
	44	128.0	137.9	307.2	123.1	143.7	295.4	118.1	149.4	283.6	113.4	155.4	272.2	108.9	161.6	261.3
	45	133.3	138.6	320.0	128.2	144.4	307.7	123.1	150.2	295.4	118.1	156.2	283.6	113.4	162.4	272.2
	46	138.7	139.3	332.8	133.3	145.1	320.0	128.0	150.9	307.2	122.9	157.0	294.9	118.0	163.2	283.1
	48	144.2	140.0	346.1	138.7	145.8	332.8	133.1	151.7	319.5	127.8	157.7	306.7	122.7	164.1	294.4
	50	150.0	140.7	359.9	144.2	146.6	346.1	138.4	152.4	332.3	132.9	158.5	319.0	127.6	164.9	306.2
5CPA143	40	130.2	149.2	312.5	125.2	155.4	300.5	120.2	161.7	288.4	115.4	168.1	276.9	110.8	174.9	265.8
	42	135.6	150.0	325.5	130.4	156.2	313.0	125.2	162.5	300.5	120.2	169.0	288.4	115.4	175.7	276.9
	44	141.3	150.7	339.1	135.8	157.0	326.0	130.4	163.3	313.0	125.2	169.8	300.5	120.2	176.6	288.4
	45	147.2	151.5	353.2	141.5	157.8	339.6	135.8	164.1	326.0	130.4	170.7	313.0	125.2	177.5	300.5
	46	153.0	152.2	367.3	147.2	158.6	353.2	141.3	164.9	339.1	135.6	171.5	325.5	130.2	178.4	312.5
	48	159.2	153.0	382.0	153.0	159.4	367.3	146.9	165.8	352.6	141.0	172.4	338.5	135.4	179.3	325.0
	50	165.5	153.8	397.3	159.2	160.2	382.0	152.8	166.6	366.7	146.7	173.2	352.1	140.8	180.2	338.0
5CPA155	40	139.1	158.5	333.9	133.8	165.1	321.1	128.4	171.7	308.2	123.3	178.6	295.9	118.4	185.7	284.0
	42	144.9	159.3	347.8	139.3	165.9	334.4	133.8	172.6	321.1	128.4	179.5	308.2	123.3	186.6	295.9
	44	151.0	160.1	362.3	145.2	166.8	348.4	139.3	173.4	334.4	133.8	180.4	321.1	128.4	187.6	308.2
	45	157.2	160.9	377.4	151.2	167.6	362.9	145.2	174.3	348.4	139.3	181.3	334.4	133.8	188.5	321.1
	46	163.5	161.7	392.5	157.2	168.4	377.4	151.0	175.2	362.3	144.9	182.2	347.8	139.1	189.5	333.9
	48	170.1	162.5	408.2	163.5	169.3	392.5	157.0	176.1	376.8	150.7	183.1	361.7	144.7	190.4	347.3
	50	176.9	163.3	424.5	170.1	170.1	408.2	163.3	176.9	391.9	156.7	184.0	376.2	150.5	191.4	361.1

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R410A - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA171	40	153.8	178.1	369.2	147.9	185.5	355.0	142.0	192.9	340.8	136.3	200.6	327.2	130.9	208.7	314.1
	42	160.3	179.0	384.6	154.1	186.4	369.8	147.9	193.9	355.0	142.0	201.6	340.8	136.3	209.7	327.2
	44	166.9	179.9	400.6	160.5	187.4	385.2	154.1	194.9	369.8	147.9	202.6	355.0	142.0	210.8	340.8
	45	173.9	180.8	417.3	167.2	188.3	401.3	160.5	195.8	385.2	154.1	203.7	369.8	147.9	211.8	355.0
	46	180.8	181.7	434.0	173.9	189.2	417.3	166.9	196.8	400.6	160.3	204.7	384.6	153.8	212.9	369.2
	48	188.1	182.6	451.4	180.8	190.2	434.0	173.6	197.8	416.7	166.7	205.7	400.0	160.0	213.9	384.0
	50	195.6	183.5	469.4	188.1	191.1	451.4	180.6	198.8	433.3	173.3	206.7	416.0	166.4	215.0	399.4
5CPA182	40	166.1	190.7	398.6	159.7	198.7	383.3	153.3	206.6	367.9	147.2	214.9	353.2	141.3	223.5	339.1
	42	173.0	191.7	415.2	166.3	199.7	399.2	159.7	207.7	383.3	153.3	216.0	367.9	147.2	224.6	353.2
	44	180.2	192.7	432.5	173.3	200.7	415.9	166.3	208.7	399.2	159.7	217.1	383.3	153.3	225.8	367.9
	45	187.7	193.6	450.5	180.5	201.7	433.2	173.3	209.8	415.9	166.3	218.2	399.2	159.7	226.9	383.3
	46	195.2	194.6	468.5	187.7	202.7	450.5	180.2	210.8	432.5	173.0	219.2	415.2	166.1	228.0	398.6
	48	203.0	195.6	487.3	195.2	203.7	468.5	187.4	211.9	449.8	179.9	220.3	431.8	172.7	229.2	414.5
	50	211.2	196.6	506.8	203.0	204.7	487.3	194.9	212.9	467.8	187.1	221.4	449.1	179.6	230.3	431.1
5CPA194	40	180.3	205.7	432.6	173.3	214.3	416.0	166.4	222.8	399.3	159.7	231.7	383.4	153.3	241.0	368.0
	42	187.8	206.7	450.6	180.5	215.3	433.3	173.3	223.9	416.0	166.4	232.9	399.3	159.7	242.2	383.4
	44	195.6	207.8	469.4	188.1	216.4	451.4	180.5	225.1	433.3	173.3	234.1	416.0	166.4	243.4	399.3
	45	203.7	208.8	489.0	195.9	217.5	470.2	188.1	226.2	451.4	180.5	235.2	433.3	173.3	244.7	416.0
	46	211.9	209.8	508.5	203.7	218.6	489.0	195.6	227.3	469.4	187.8	236.4	450.6	180.3	245.9	432.6
	48	220.4	210.9	528.9	211.9	219.7	508.5	203.4	228.5	488.2	195.3	237.6	468.7	187.5	247.1	449.9
	50	229.2	211.9	550.0	220.4	220.8	528.9	211.5	229.6	507.7	203.1	238.8	487.4	195.0	248.3	467.9
5CPA206	40	185.5	211.4	445.2	178.4	220.2	428.1	171.2	229.0	410.9	164.4	238.1	394.5	157.8	247.7	378.7
	42	193.2	212.4	463.7	185.8	221.3	445.9	178.4	230.1	428.1	171.2	239.3	410.9	164.4	248.9	394.5
	44	201.3	213.5	483.1	193.5	222.4	464.5	185.8	231.3	445.9	178.4	240.5	428.1	171.2	250.2	410.9
	45	209.7	214.6	503.2	201.6	223.5	483.8	193.5	232.4	464.5	185.8	241.7	445.9	178.4	251.4	428.1
	46	218.1	215.6	523.3	209.7	224.6	503.2	201.3	233.6	483.1	193.2	242.9	463.7	185.5	252.7	445.2
	48	226.8	216.7	544.3	218.1	225.7	523.3	209.3	234.8	502.4	201.0	244.2	482.3	192.9	253.9	463.0
	50	235.8	217.8	566.0	226.8	226.9	544.3	217.7	235.9	522.5	209.0	245.4	501.6	200.6	255.2	481.5

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R407C - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA025	40	22.3	25.3	53.4	21.4	26.4	51.4	20.6	27.5	49.3	19.7	28.6	47.4	18.9	29.7	45.5
	42	23.2	25.5	55.7	22.3	26.5	53.5	21.4	27.6	51.4	20.6	28.7	49.3	19.7	29.8	47.4
	44	24.2	25.6	58.0	23.2	26.7	55.8	22.3	27.7	53.5	21.4	28.8	51.4	20.6	30.0	49.3
	45	25.2	25.7	60.4	24.2	26.8	58.1	23.2	27.9	55.8	22.3	29.0	53.5	21.4	30.1	51.4
	46	26.2	25.9	62.8	25.2	26.9	60.4	24.2	28.0	58.0	23.2	29.1	55.7	22.3	30.3	53.4
	48	27.2	26.0	65.3	26.2	27.1	62.8	25.1	28.2	60.3	24.1	29.3	57.9	23.2	30.4	55.6
	50	28.3	26.1	67.9	27.2	27.2	65.3	26.1	28.3	62.7	25.1	29.4	60.2	24.1	30.6	57.8
5CPA030	40	25.9	29.1	62.3	24.9	30.3	59.9	24.0	31.6	57.5	23.0	32.8	55.2	22.1	34.1	53.0
	42	27.0	29.3	64.9	26.0	30.5	62.4	24.9	31.7	59.9	24.0	33.0	57.5	23.0	34.3	55.2
	44	28.2	29.4	67.6	27.1	30.6	65.0	26.0	31.9	62.4	24.9	33.1	59.9	24.0	34.5	57.5
	45	29.3	29.6	70.4	28.2	30.8	67.7	27.1	32.0	65.0	26.0	33.3	62.4	24.9	34.6	59.9
	46	30.5	29.7	73.2	29.3	31.0	70.4	28.2	32.2	67.6	27.0	33.5	64.9	25.9	34.8	62.3
	48	31.7	29.9	76.1	30.5	31.1	73.2	29.3	32.4	70.3	28.1	33.6	67.5	27.0	35.0	64.8
	50	33.0	30.0	79.2	31.7	31.3	76.1	30.5	32.5	73.1	29.2	33.8	70.2	28.1	35.2	67.4
5CPA034	40	29.5	32.8	70.9	28.4	34.2	68.2	27.3	35.5	65.4	26.2	37.0	62.8	25.1	38.5	60.3
	42	30.8	33.0	73.8	29.6	34.4	71.0	28.4	35.7	68.2	27.3	37.2	65.4	26.2	38.6	62.8
	44	32.0	33.1	76.9	30.8	34.5	74.0	29.6	35.9	71.0	28.4	37.3	68.2	27.3	38.8	65.4
	45	33.4	33.3	80.1	32.1	34.7	77.0	30.8	36.1	74.0	29.6	37.5	71.0	28.4	39.0	68.2
	46	34.7	33.5	83.3	33.4	34.9	80.1	32.0	36.3	76.9	30.8	37.7	73.8	29.5	39.2	70.9
	48	36.1	33.6	86.7	34.7	35.0	83.3	33.3	36.4	80.0	32.0	37.9	76.8	30.7	39.4	73.7
	50	37.6	33.8	90.1	36.1	35.2	86.7	34.7	36.6	83.2	33.3	38.1	79.9	31.9	39.6	76.7
5CPA040	40	36.8	42.5	88.3	35.4	44.2	84.9	34.0	46.0	81.5	32.6	47.8	78.3	31.3	49.8	75.1
	42	38.3	42.7	92.0	36.9	44.5	88.5	35.4	46.2	84.9	34.0	48.1	81.5	32.6	50.0	78.3
	44	39.9	42.9	95.8	38.4	44.7	92.2	36.9	46.5	88.5	35.4	48.3	84.9	34.0	50.3	81.5
	45	41.6	43.1	99.8	40	44.9	96.0	38.4	46.7	92.2	36.9	48.6	88.5	35.4	50.5	84.9
	46	43.3	43.3	103.8	41.6	45.1	99.8	39.9	46.9	95.8	38.3	48.8	92.0	36.8	50.8	88.3
	48	45.0	43.5	108.0	43.3	45.4	103.8	41.5	47.2	99.7	39.9	49.1	95.7	38.3	51.0	91.9
	50	46.8	43.8	112.3	45.0	45.6	108.0	43.2	47.4	103.7	41.5	49.3	99.5	39.8	51.3	95.5
5CPA046	40	41.6	46.1	99.8	40.0	48.1	96.0	38.4	50.0	92.1	36.9	52.0	88.5	35.4	54.1	84.9
	42	43.3	46.4	104.0	41.7	48.3	100.0	40.0	50.2	96.0	38.4	52.3	92.1	36.9	54.3	88.5
	44	45.1	46.6	108.3	43.4	48.6	104.1	41.7	50.5	100.0	40.0	52.5	96.0	38.4	54.6	92.1
	45	47.0	46.8	112.8	45.2	48.8	108.5	43.4	50.8	104.1	41.7	52.8	100.0	40.0	54.9	96.0
	46	48.9	47.1	117.3	47.0	49.0	112.8	45.1	51.0	108.3	43.3	53.0	104.0	41.6	55.2	99.8
	48	50.8	47.3	122.0	48.9	49.3	117.3	46.9	51.3	112.6	45.1	53.3	108.1	43.3	55.4	103.8
	50	52.9	47.6	126.9	50.8	49.5	122.0	48.8	51.5	117.1	46.9	53.6	112.5	45.0	55.7	108.0

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R407C - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA052	40	46.4	49.8	111.3	44.6	51.9	107.0	42.8	54.0	102.7	41.1	56.1	98.6	39.5	58.4	94.7
	42	48.3	50.1	115.9	46.4	52.2	111.5	44.6	54.3	107.0	42.8	56.4	102.7	41.1	58.7	98.6
	44	50.3	50.3	120.8	48.4	52.4	116.1	46.4	54.5	111.5	44.6	56.7	107.0	42.8	59.0	102.7
	45	52.4	50.6	125.8	50.4	52.7	121.0	48.4	54.8	116.1	46.4	57.0	111.5	44.6	59.3	107.0
	46	54.5	50.8	130.8	52.4	53.0	125.8	50.3	55.1	120.8	48.3	57.3	115.9	46.4	59.6	111.3
	48	56.7	51.1	136.1	54.5	53.2	130.8	52.3	55.4	125.6	50.2	57.6	120.6	48.2	59.9	115.8
	50	59.0	51.4	141.5	56.7	53.5	136.1	54.4	55.6	130.6	52.2	57.9	125.4	50.2	60.2	120.4
5CPA059	40	55.2	63.6	132.5	53.1	66.3	127.4	51.0	68.9	122.3	48.9	71.7	117.4	47.0	74.6	112.7
	42	57.5	64.0	138.0	55.3	66.6	132.7	53.1	69.3	127.4	51.0	72.1	122.3	48.9	74.9	117.4
	44	59.9	64.3	143.8	57.6	67.0	138.2	55.3	69.6	132.7	53.1	72.4	127.4	51.0	75.3	122.3
	45	62.4	64.6	149.8	60	67.3	144.0	57.6	70.0	138.2	55.3	72.8	132.7	53.1	75.7	127.4
	46	64.9	64.9	155.8	62.4	67.6	149.8	59.9	70.3	143.8	57.5	73.2	138.0	55.2	76.1	132.5
	48	67.5	65.3	162.0	64.9	68.0	155.8	62.3	70.7	149.5	59.8	73.5	143.5	57.4	76.5	137.8
	50	70.2	65.6	168.5	67.5	68.3	162.0	64.8	71.0	155.5	62.2	73.9	149.3	59.7	76.8	143.3
5CPA068	40	61.2	67.3	146.9	58.8	70.1	141.2	56.5	72.9	135.6	54.2	75.9	130.1	52.1	78.9	124.9
	42	63.7	67.7	153.0	61.3	70.5	147.1	58.8	73.3	141.2	56.5	76.2	135.6	54.2	79.3	130.1
	44	66.4	68.0	159.3	63.8	70.8	153.2	61.3	73.7	147.1	58.8	76.6	141.2	56.5	79.7	135.6
	45	69.2	68.4	166.0	66.5	71.2	159.6	63.8	74.0	153.2	61.3	77.0	147.1	58.8	80.1	141.2
	46	71.9	68.7	172.6	69.2	71.6	166.0	66.4	74.4	159.3	63.7	77.4	153.0	61.2	80.5	146.9
	48	74.8	69.0	179.5	71.9	71.9	172.6	69.0	74.8	165.7	66.3	77.8	159.1	63.6	80.9	152.7
	50	77.8	69.4	186.7	74.8	72.3	179.5	71.8	75.2	172.3	68.9	78.2	165.5	66.2	81.3	158.8
5CPA079	40	69.6	74.7	166.9	66.9	77.8	160.5	64.2	80.9	154.1	61.6	84.2	147.9	59.2	87.5	142.0
	42	72.5	75.1	173.9	69.7	78.2	167.2	66.9	81.3	160.5	64.2	84.6	154.1	61.6	88.0	147.9
	44	75.5	75.5	181.1	72.6	78.6	174.2	69.7	81.7	167.2	66.9	85.0	160.5	64.2	88.4	154.1
	45	78.6	75.8	188.7	75.6	79	181.4	72.6	82.2	174.2	69.7	85.4	167.2	66.9	88.9	160.5
	46	81.8	76.2	196.2	78.6	79.4	188.7	75.5	82.6	181.1	72.5	85.9	173.9	69.6	89.3	166.9
	48	85.0	76.6	204.1	81.8	79.8	196.2	78.5	83.0	188.4	75.4	86.3	180.9	72.3	89.8	173.6
	50	88.4	77.0	212.3	85.0	80.2	204.1	81.6	83.4	195.9	78.4	86.7	188.1	75.2	90.2	180.6
5CPA091	40	83.2	92.2	199.6	80.0	96.0	192.0	76.8	99.9	184.3	73.7	103.9	176.9	70.8	108.0	169.8
	42	86.6	92.7	207.9	83.3	96.5	200.0	80.0	100.4	192.0	76.8	104.4	184.3	73.7	108.6	176.9
	44	90.3	93.1	216.6	86.8	97.0	208.3	83.3	100.9	200.0	80.0	104.9	192.0	76.8	109.1	184.3
	45	94.0	93.6	225.6	90.4	97.5	217.0	86.8	101.4	208.3	83.3	105.5	200.0	80.0	109.7	192.0
	46	97.8	94.1	234.7	94.0	98.0	225.6	90.3	101.9	216.6	86.6	106.0	207.9	83.2	110.2	199.6
	48	101.7	94.5	244.1	97.8	98.5	234.7	93.9	102.4	225.3	90.1	106.5	216.3	86.5	110.8	207.6
	50	105.8	95.0	253.8	101.7	99.0	244.1	97.6	102.9	234.3	93.7	107.0	224.9	90.0	111.3	215.9

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R407C - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA103	40	92.7	99.6	222.6	89.2	103.7	214.0	85.6	107.9	205.5	82.2	112.2	197.3	78.9	116.7	189.4
	42	96.6	100.1	231.9	92.9	104.2	223.0	89.2	108.4	214.0	85.6	112.8	205.5	82.2	117.3	197.3
	44	100.6	100.6	241.5	96.8	104.8	232.2	92.9	109.0	223.0	89.2	113.3	214.0	85.6	117.9	205.5
	45	104.8	101.1	251.6	100.8	105.3	241.9	96.8	109.5	232.2	92.9	113.9	223.0	89.2	118.4	214.0
	46	109.0	101.6	261.7	104.8	105.8	251.6	100.6	110.1	241.5	96.6	114.5	231.9	92.7	119.0	222.6
	48	113.4	102.1	272.1	109.0	106.4	261.7	104.7	110.6	251.2	100.5	115.0	241.1	96.5	119.6	231.5
	50	117.9	102.6	283.0	113.4	106.9	272.1	108.9	111.2	261.2	104.5	115.6	250.8	100.3	120.2	240.8
5CPA119	40	115.9	124.5	278.2	111.5	129.7	267.5	107.0	134.9	256.8	102.7	140.3	246.6	98.6	145.9	236.7
	42	120.8	125.2	289.8	116.1	130.4	278.7	111.5	135.6	267.5	107.0	141.0	256.8	102.7	146.7	246.6
	44	125.8	125.8	301.9	121.0	131.0	290.3	116.1	136.3	278.7	111.5	141.7	267.5	107.0	147.4	256.8
	45	131.0	126.4	314.5	126	131.7	302.4	121.0	137.0	290.3	116.1	142.4	278.7	111.5	148.1	267.5
	46	136.3	127.1	327.1	131.0	132.4	314.5	125.8	137.7	301.9	120.8	143.2	289.8	115.9	148.9	278.2
	48	141.7	127.7	340.2	136.3	133.0	327.1	130.8	138.3	314.0	125.6	143.9	301.4	120.6	149.6	289.4
	50	147.4	128.3	353.8	141.7	133.7	340.2	136.1	139.0	326.6	130.6	144.6	313.5	125.4	150.4	301.0
5CPA131	40	118.7	130.9	284.9	114.1	136.3	273.9	109.6	141.8	263.0	105.2	147.5	252.4	101.0	153.4	242.3
	42	123.6	131.5	296.7	118.9	137.0	285.3	114.1	142.5	273.9	109.6	148.2	263.0	105.2	154.1	252.4
	44	128.8	132.2	309.1	123.8	137.7	297.2	118.9	143.2	285.3	114.1	148.9	273.9	109.6	154.9	263.0
	45	134.2	132.9	322.0	129	138.4	309.6	123.8	143.9	297.2	118.9	149.7	285.3	114.1	155.7	273.9
	46	139.5	133.5	334.9	134.2	139.1	322.0	128.8	144.7	309.1	123.6	150.4	296.7	118.7	156.5	284.9
	48	145.1	134.2	348.3	139.5	139.8	334.9	133.9	145.4	321.5	128.6	151.2	308.6	123.4	157.2	296.3
	50	150.9	134.9	362.2	145.1	140.5	348.3	139.3	146.1	334.3	133.7	152.0	321.0	128.4	158.0	308.1
5CPA143	40	130.7	142.0	313.8	125.7	148.0	301.7	120.7	153.9	289.7	115.9	160.0	278.1	111.2	166.4	267.0
	42	136.2	142.8	326.9	131.0	148.7	314.3	125.7	154.6	301.7	120.7	160.8	289.7	115.9	167.3	278.1
	44	141.9	143.5	340.5	136.4	149.4	327.4	131.0	155.4	314.3	125.7	161.6	301.7	120.7	168.1	289.7
	45	147.8	144.2	354.7	142.1	150.2	341.0	136.4	156.2	327.4	131.0	162.5	314.3	125.7	169.0	301.7
	46	153.7	144.9	368.9	147.8	151.0	354.7	141.9	157.0	340.5	136.2	163.3	326.9	130.7	169.8	313.8
	48	159.8	145.6	383.6	153.7	151.7	368.9	147.5	157.8	354.1	141.6	164.1	339.9	136.0	170.6	326.4
	50	166.2	146.4	399.0	159.8	152.5	383.6	153.4	158.6	368.3	147.3	164.9	353.5	141.4	171.5	339.4
5CPA155	40	139.1	149.4	333.9	133.8	155.6	321.1	128.4	161.9	308.2	123.3	168.3	295.9	118.4	175.1	284.0
	42	144.9	150.2	347.8	139.3	156.4	334.4	133.8	162.7	321.1	128.4	169.2	308.2	123.3	176.0	295.9
	44	151.0	150.9	362.3	145.2	157.2	348.4	139.3	163.5	334.4	133.8	170.0	321.1	128.4	176.8	308.2
	45	157.2	151.7	377.4	151.2	158	362.9	145.2	164.3	348.4	139.3	170.9	334.4	133.8	177.7	321.1
	46	163.5	152.4	392.5	157.2	158.8	377.4	151.0	165.1	362.3	144.9	171.7	347.8	139.1	178.6	333.9
	48	170.1	153.2	408.2	163.5	159.6	392.5	157.0	166.0	376.8	150.7	172.6	361.7	144.7	179.5	347.3
	50	176.9	154.0	424.5	170.1	160.4	408.2	163.3	166.8	391.9	156.7	173.5	376.2	150.5	180.4	361.1

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R407C - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA171	40	155.5	173.3	373.2	149.5	180.6	358.8	143.5	187.8	344.5	137.8	195.3	330.7	132.3	203.1	317.5
	42	162.0	174.2	388.8	155.8	181.5	373.8	149.5	188.7	358.8	143.5	196.3	344.5	137.8	204.1	330.7
	44	168.7	175.1	405.0	162.2	182.4	389.4	155.8	189.7	373.8	149.5	197.3	358.8	143.5	205.2	344.5
	45	175.8	176.0	421.8	169	183.3	405.6	162.2	190.6	389.4	155.8	198.3	373.8	149.5	206.2	358.8
	46	182.8	176.8	438.7	175.8	184.2	421.8	168.7	191.6	405.0	162.0	199.2	388.8	155.5	207.2	373.2
	48	190.1	177.7	456.2	182.8	185.1	438.7	175.5	192.5	421.1	168.5	200.2	404.3	161.7	208.3	388.1
	50	197.7	178.6	474.5	190.1	186.1	456.2	182.5	193.5	438.0	175.2	201.2	420.5	168.2	209.3	403.7
5CPA182	40	167.6	184.5	402.1	161.1	192.2	386.7	154.7	199.9	371.2	148.5	207.9	356.4	142.5	216.2	342.1
	42	174.5	185.4	418.9	167.8	193.2	402.8	161.1	200.9	386.7	154.7	208.9	371.2	148.5	217.3	356.4
	44	181.8	186.4	436.3	174.8	194.1	419.6	167.8	201.9	402.8	161.1	210.0	386.7	154.7	218.4	371.2
	45	189.4	187.3	454.5	182.1	195.1	437.0	174.8	202.9	419.6	167.8	211.0	402.8	161.1	219.5	386.7
	46	197.0	188.2	472.7	189.4	196.1	454.5	181.8	203.9	436.3	174.5	212.1	418.9	167.6	220.6	402.1
	48	204.8	189.2	491.6	197.0	197.1	472.7	189.1	204.9	453.8	181.5	213.1	435.6	174.3	221.7	418.2
	50	213.0	190.1	511.3	204.8	198.0	491.6	196.6	206.0	471.9	188.8	214.2	453.1	181.2	222.8	434.9
5CPA194	40	180.7	195.6	433.7	173.8	203.7	417.0	166.8	211.9	400.3	160.1	220.3	384.3	153.7	229.1	369.0
	42	188.2	196.5	451.8	181.0	204.7	434.4	173.8	212.9	417.0	166.8	221.4	400.3	160.1	230.3	384.3
	44	196.1	197.5	470.6	188.5	205.8	452.5	181.0	214.0	434.4	173.8	222.6	417.0	166.8	231.5	400.3
	45	204.3	198.5	490.2	196.4	206.8	471.4	188.5	215.1	452.5	181.0	223.7	434.4	173.8	232.6	417.0
	46	212.4	199.5	509.8	204.3	207.8	490.2	196.1	216.1	470.6	188.2	224.8	451.8	180.7	233.8	433.7
	48	220.9	200.5	530.2	212.4	208.9	509.8	203.9	217.2	489.4	195.8	225.9	469.9	187.9	235.0	451.1
	50	229.8	201.5	551.4	220.9	209.9	530.2	212.1	218.3	509.0	203.6	227.0	488.6	195.5	236.1	469.1
5CPA206	40	185.5	199.3	445.2	178.4	207.6	428.1	171.2	215.9	410.9	164.4	224.5	394.5	157.8	233.5	378.7
	42	193.2	200.3	463.7	185.8	208.6	445.9	178.4	216.9	428.1	171.2	225.6	410.9	164.4	234.6	394.5
	44	201.3	201.3	483.1	193.5	209.6	464.5	185.8	218.0	445.9	178.4	226.8	428.1	171.2	235.8	410.9
	45	209.7	202.3	503.2	201.6	210.7	483.8	193.5	219.1	464.5	185.8	227.9	445.9	178.4	237.0	428.1
	46	218.1	203.3	523.3	209.7	211.8	503.2	201.3	220.2	483.1	193.2	229.0	463.7	185.5	238.2	445.2
	48	226.8	204.3	544.3	218.1	212.8	523.3	209.3	221.3	502.4	201.0	230.2	482.3	192.9	239.4	463.0
	50	235.8	205.3	566.0	226.8	213.9	544.3	217.7	222.4	522.5	209.0	231.3	501.6	200.6	240.6	481.5

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R22 - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA025	40	23.6	25.7	56.5	22.6	26.8	54.4	21.7	27.9	52.2	20.9	29.0	50.1	20.0	30.1	48.1
	42	24.5	25.9	58.9	23.6	26.9	56.6	22.6	28.0	54.4	21.7	29.1	52.2	20.9	30.3	50.1
	44	25.6	26.0	61.3	24.6	27.1	59.0	23.6	28.1	56.6	22.6	29.3	54.4	21.7	30.4	52.2
	45	26.6	26.1	63.9	25.6	27.2	61.4	24.6	28.3	59.0	23.6	29.4	56.6	22.6	30.6	54.4
	46	27.7	26.2	66.5	26.6	27.3	63.9	25.6	28.4	61.3	24.5	29.6	58.9	23.6	30.7	56.5
	48	28.8	26.4	69.1	27.7	27.5	66.5	26.6	28.6	63.8	25.5	29.7	61.2	24.5	30.9	58.8
	50	29.9	26.5	71.9	28.8	27.6	69.1	27.6	28.7	66.3	26.5	29.9	63.7	25.5	31.1	61.1
5CPA030	40	27.0	29.2	64.7	25.9	30.4	62.2	24.9	31.7	59.7	23.9	32.9	57.3	22.9	34.2	55.0
	42	28.1	29.4	67.4	27.0	30.6	64.8	25.9	31.8	62.2	24.9	33.1	59.7	23.9	34.4	57.3
	44	29.3	29.5	70.2	28.1	30.7	67.5	27.0	32.0	64.8	25.9	33.3	62.2	24.9	34.6	59.7
	45	30.5	29.7	73.1	29.3	30.9	70.3	28.1	32.1	67.5	27.0	33.4	64.8	25.9	34.8	62.2
	46	31.7	29.8	76.1	30.5	31.1	73.1	29.3	32.3	70.2	28.1	33.6	67.4	27.0	34.9	64.7
	48	33.0	30.0	79.1	31.7	31.2	76.1	30.4	32.5	73.0	29.2	33.8	70.1	28.0	35.1	67.3
	50	34.3	30.1	82.3	33.0	31.4	79.1	31.6	32.6	75.9	30.4	33.9	72.9	29.2	35.3	70.0
5CPA034	40	30.6	33.0	73.5	29.5	34.4	70.7	28.3	35.8	67.9	27.2	37.2	65.2	26.1	38.7	62.6
	42	31.9	33.2	76.6	30.7	34.6	73.7	29.5	35.9	70.7	28.3	37.4	67.9	27.2	38.9	65.2
	44	33.2	33.3	79.8	32.0	34.7	76.7	30.7	36.1	73.7	29.5	37.6	70.7	28.3	39.1	67.9
	45	34.6	33.5	83.1	33.3	34.9	79.9	32.0	36.3	76.7	30.7	37.7	73.7	29.5	39.3	70.7
	46	36.0	33.7	86.4	34.6	35.1	83.1	33.2	36.5	79.8	31.9	37.9	76.6	30.6	39.5	73.5
	48	37.5	33.8	89.9	36.0	35.2	86.4	34.6	36.7	83.0	33.2	38.1	79.7	31.9	39.7	76.5
	50	39.0	34.0	93.5	37.5	35.4	89.9	36.0	36.8	86.3	34.5	38.3	82.9	33.1	39.8	79.5
5CPA040	40	37.7	42.5	90.5	36.3	44.2	87.1	34.8	46.0	83.6	33.4	47.8	80.2	32.1	49.8	77.0
	42	39.3	42.7	94.3	37.8	44.5	90.7	36.3	46.2	87.1	34.8	48.1	83.6	33.4	50.0	80.2
	44	40.9	42.9	98.2	39.4	44.7	94.5	37.8	46.5	90.7	36.3	48.3	87.1	34.8	50.3	83.6
	45	42.6	43.1	102.3	41	44.9	98.4	39.4	46.7	94.5	37.8	48.6	90.7	36.3	50.5	87.1
	46	44.3	43.3	106.4	42.6	45.1	102.3	40.9	46.9	98.2	39.3	48.8	94.3	37.7	50.8	90.5
	48	46.1	43.5	110.7	44.3	45.4	106.4	42.6	47.2	102.2	40.9	49.1	98.1	39.2	51.0	94.2
	50	48.0	43.8	115.1	46.1	45.6	110.7	44.3	47.4	106.3	42.5	49.3	102.0	40.8	51.3	97.9
5CPA046	40	42.1	46.6	101.1	40.5	48.6	97.3	38.9	50.5	93.4	37.3	52.5	89.6	35.9	54.6	86.0
	42	43.9	46.9	105.4	42.2	48.8	101.3	40.5	50.8	97.3	38.9	52.8	93.4	37.3	54.9	89.6
	44	45.7	47.1	109.7	44.0	49.1	105.5	42.2	51.0	101.3	40.5	53.1	97.3	38.9	55.2	93.4
	45	47.6	47.3	114.3	45.8	49.3	109.9	44.0	51.3	105.5	42.2	53.3	101.3	40.5	55.5	97.3
	46	49.5	47.6	118.9	47.6	49.5	114.3	45.7	51.5	109.7	43.9	53.6	105.4	42.1	55.7	101.1
	48	51.5	47.8	123.6	49.5	49.8	118.9	47.6	51.8	114.1	45.7	53.9	109.6	43.8	56.0	105.2
	50	53.6	48.0	128.6	51.5	50.0	123.6	49.5	52.0	118.7	47.5	54.1	114.0	45.6	56.3	109.4

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R22 - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA052	40	46.6	50.8	111.7	44.8	52.9	107.4	43.0	55.0	103.1	41.3	57.2	99.0	39.6	59.5	95.1
	42	48.5	51.0	116.4	46.6	53.2	111.9	44.8	55.3	107.4	43.0	57.5	103.1	41.3	59.8	99.0
	44	50.5	51.3	121.2	48.6	53.4	116.6	46.6	55.6	111.9	44.8	57.8	107.4	43.0	60.1	103.1
	45	52.6	51.6	126.3	50.6	53.7	121.4	48.6	55.8	116.6	46.6	58.1	111.9	44.8	60.4	107.4
	46	54.7	51.8	131.3	52.6	54.0	126.3	50.5	56.1	121.2	48.5	58.4	116.4	46.6	60.7	111.7
	48	56.9	52.1	136.6	54.7	54.2	131.3	52.5	56.4	126.1	50.4	58.7	121.1	48.4	61.0	116.2
	50	59.2	52.3	142.1	56.9	54.5	136.6	54.6	56.7	131.1	52.5	59.0	125.9	50.4	61.3	120.9
5CPA059	40	56.6	63.6	135.8	54.4	66.3	130.6	52.2	68.9	125.4	50.1	71.7	120.3	48.1	74.6	115.5
	42	58.9	64.0	141.5	56.7	66.6	136.0	54.4	69.3	130.6	52.2	72.1	125.4	50.1	74.9	120.3
	44	61.4	64.3	147.4	59.0	67.0	141.7	56.7	69.6	136.0	54.4	72.4	130.6	52.2	75.3	125.4
	45	64.0	64.6	153.5	61.5	67.3	147.6	59.0	70.0	141.7	56.7	72.8	136.0	54.4	75.7	130.6
	46	66.5	64.9	159.6	64.0	67.6	153.5	61.4	70.3	147.4	58.9	73.2	141.5	56.6	76.1	135.8
	48	69.2	65.3	166.0	66.5	68.0	159.6	63.9	70.7	153.3	61.3	73.5	147.1	58.9	76.5	141.2
	50	71.9	65.6	172.7	69.2	68.3	166.0	66.4	71.0	159.4	63.8	73.9	153.0	61.2	76.8	146.9
5CPA068	40	61.7	68.2	148.2	59.4	71.0	142.5	57.0	73.9	136.8	54.7	76.8	131.3	52.5	79.9	126.1
	42	64.3	68.5	154.4	61.8	71.4	148.4	59.4	74.2	142.5	57.0	77.2	136.8	54.7	80.3	131.3
	44	67.0	68.9	160.8	64.4	71.7	154.6	61.8	74.6	148.4	59.4	77.6	142.5	57.0	80.7	136.8
	45	69.8	69.2	167.5	67.1	72.1	161.0	64.4	75.0	154.6	61.8	78.0	148.4	59.4	81.1	142.5
	46	72.6	69.6	174.2	69.8	72.5	167.5	67.0	75.4	160.8	64.3	78.4	154.4	61.7	81.5	148.2
	48	75.5	69.9	181.1	72.6	72.8	174.2	69.7	75.7	167.2	66.9	78.8	160.5	64.2	81.9	154.1
	50	78.5	70.3	188.4	75.5	73.2	181.1	72.5	76.1	173.9	69.6	79.2	166.9	66.8	82.3	160.3
5CPA079	40	69.8	76.1	167.6	67.2	79.3	161.2	64.5	82.5	154.7	61.9	85.8	148.5	59.4	89.2	142.6
	42	72.7	76.5	174.6	69.9	79.7	167.9	67.2	82.9	161.2	64.5	86.2	154.7	61.9	89.6	148.5
	44	75.8	76.9	181.9	72.9	80.1	174.9	69.9	83.3	167.9	67.2	86.6	161.2	64.5	90.1	154.7
	45	78.9	77.3	189.4	75.9	80.5	182.2	72.9	83.7	174.9	69.9	87.1	167.9	67.2	90.6	161.2
	46	82.1	77.7	197.0	78.9	80.9	189.4	75.8	84.1	181.9	72.7	87.5	174.6	69.8	91.0	167.6
	48	85.4	78.1	204.9	82.1	81.3	197.0	78.8	84.6	189.1	75.7	87.9	181.6	72.6	91.5	174.3
	50	88.8	78.4	213.1	85.4	81.7	204.9	82.0	85.0	196.7	78.7	88.4	188.8	75.5	91.9	181.3
5CPA091	40	84.3	93.1	202.3	81.0	97.0	194.5	77.8	100.9	186.7	74.7	104.9	179.3	71.7	109.1	172.1
	42	87.8	93.6	210.7	84.4	97.5	202.6	81.0	101.4	194.5	77.8	105.5	186.7	74.7	109.7	179.3
	44	91.5	94.1	219.5	87.9	98.0	211.0	84.4	101.9	202.6	81.0	106.0	194.5	77.8	110.2	186.7
	45	95.3	94.6	228.6	91.6	98.5	219.8	87.9	102.4	211.0	84.4	106.5	202.6	81.0	110.8	194.5
	46	99.1	95.0	237.8	95.3	99.0	228.6	91.5	103.0	219.5	87.8	107.1	210.7	84.3	111.4	202.3
	48	103.0	95.5	247.3	99.1	99.5	237.8	95.1	103.5	228.3	91.3	107.6	219.1	87.7	111.9	210.4
	50	107.2	96.0	257.2	103.0	100.0	247.3	98.9	104.0	237.4	95.0	108.1	227.9	91.2	112.5	218.8

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R22 - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA103	40	93.1	101.5	223.5	89.5	105.7	214.9	86.0	109.9	206.3	82.5	114.3	198.0	79.2	118.9	190.1
	42	97.0	102.0	232.8	93.3	106.2	223.8	89.5	110.5	214.9	86.0	114.9	206.3	82.5	119.5	198.0
	44	101.0	102.5	242.5	97.2	106.8	233.2	93.3	111.0	223.8	89.5	115.5	214.9	86.0	120.1	206.3
	45	105.2	103.0	252.6	101.2	107.3	242.9	97.2	111.6	233.2	93.3	116.1	223.8	89.5	120.7	214.9
	46	109.5	103.5	262.7	105.2	107.8	252.6	101.0	112.1	242.5	97.0	116.6	232.8	93.1	121.3	223.5
	48	113.8	104.0	273.2	109.5	108.4	262.7	105.1	112.7	252.2	100.9	117.2	242.1	96.8	121.9	232.4
	50	118.4	104.6	284.1	113.8	108.9	273.2	109.3	113.3	262.3	104.9	117.8	251.8	100.7	122.5	241.7
5CPA119	40	116.4	126.9	279.4	111.9	132.2	268.6	107.4	137.5	257.9	103.1	143.0	247.5	99.0	148.7	237.6
	42	121.2	127.5	291.0	116.6	132.9	279.8	111.9	138.2	268.6	107.4	143.7	257.9	103.1	149.5	247.5
	44	126.3	128.2	303.1	121.4	133.5	291.5	116.6	138.9	279.8	111.9	144.4	268.6	107.4	150.2	257.9
	45	131.6	128.8	315.7	126.5	134.2	303.6	121.4	139.6	291.5	116.6	145.2	279.8	111.9	151.0	268.6
	46	136.8	129.5	328.4	131.6	134.9	315.7	126.3	140.3	303.1	121.2	145.9	291.0	116.4	151.7	279.4
	48	142.3	130.1	341.5	136.8	135.5	328.4	131.3	141.0	315.2	126.1	146.6	302.6	121.1	152.5	290.5
	50	148.0	130.8	355.2	142.3	136.2	341.5	136.6	141.7	327.8	131.1	147.3	314.7	125.9	153.2	302.1
5CPA131	40	120.1	132.9	288.2	115.5	138.4	277.1	110.8	143.9	266.0	106.4	149.7	255.4	102.1	155.7	245.2
	42	125.1	133.5	300.2	120.3	139.1	288.6	115.5	144.7	277.1	110.8	150.4	266.0	106.4	156.5	255.4
	44	130.3	134.2	312.7	125.3	139.8	300.7	120.3	145.4	288.6	115.5	151.2	277.1	110.8	157.3	266.0
	45	135.7	134.9	325.7	130.5	140.5	313.2	125.3	146.1	300.7	120.3	152.0	288.6	115.5	158.0	277.1
	46	141.1	135.6	338.8	135.7	141.2	325.7	130.3	146.9	312.7	125.1	152.7	300.2	120.1	158.8	288.2
	48	146.8	136.2	352.3	141.1	141.9	338.8	135.5	147.6	325.2	130.1	153.5	312.2	124.9	159.6	299.7
	50	152.7	136.9	366.4	146.8	142.6	352.3	140.9	148.3	338.2	135.3	154.3	324.7	129.9	160.4	311.7
5CPA143	40	131.6	144.3	315.8	126.5	150.3	303.6	121.5	156.3	291.5	116.6	162.6	279.8	111.9	169.1	268.6
	42	137.1	145.0	328.9	131.8	151.1	316.3	126.5	157.1	303.6	121.5	163.4	291.5	116.6	169.9	279.8
	44	142.8	145.8	342.7	137.3	151.8	329.5	131.8	157.9	316.3	126.5	164.2	303.6	121.5	170.8	291.5
	45	148.7	146.5	356.9	143	152.6	343.2	137.3	158.7	329.5	131.8	165.1	316.3	126.5	171.7	303.6
	46	154.7	147.2	371.2	148.7	153.4	356.9	142.8	159.5	342.7	137.1	165.9	328.9	131.6	172.5	315.8
	48	160.9	148.0	386.1	154.7	154.1	371.2	148.5	160.3	356.4	142.5	166.7	342.1	136.8	173.4	328.4
	50	167.3	148.7	401.5	160.9	154.9	386.1	154.4	161.1	370.6	148.2	167.5	355.8	142.3	174.2	341.6
5CPA155	40	139.7	152.3	335.2	134.3	158.6	322.3	128.9	164.9	309.4	123.8	171.5	297.1	118.8	178.4	285.2
	42	145.5	153.0	349.2	139.9	159.4	335.8	134.3	165.8	322.3	128.9	172.4	309.4	123.8	179.3	297.1
	44	151.6	153.8	363.7	145.7	160.2	349.7	139.9	166.6	335.8	134.3	173.3	322.3	128.9	180.2	309.4
	45	157.9	154.6	378.9	151.8	161	364.3	145.7	167.4	349.7	139.9	174.1	335.8	134.3	181.1	322.3
	46	164.2	155.3	394.0	157.9	161.8	378.9	151.6	168.3	363.7	145.5	175.0	349.2	139.7	182.0	335.2
	48	170.8	156.1	409.8	164.2	162.6	394.0	157.6	169.1	378.3	151.3	175.9	363.2	145.3	182.9	348.6
	50	177.6	156.9	426.2	170.8	163.4	409.8	163.9	170.0	393.4	157.4	176.8	377.7	151.1	183.8	362.6

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

R22 - Performance Data

Model	Leaving Water Temperature (F)	Air Temperature (F)														
		86			95			104			115			122		
		TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM	TR	KW	GPM
5CPA171	40	157.8	175.3	378.7	151.7	182.6	364.2	145.7	189.9	349.6	139.8	197.5	335.6	134.2	205.4	322.2
	42	164.4	176.2	394.5	158.1	183.6	379.3	151.7	190.9	364.2	145.7	198.5	349.6	139.8	206.5	335.6
	44	171.2	177.1	410.9	164.6	184.5	395.1	158.1	191.9	379.3	151.7	199.5	364.2	145.7	207.5	349.6
	45	178.4	178.0	428.1	171.5	185.4	411.6	164.6	192.8	395.1	158.1	200.5	379.3	151.7	208.5	364.2
	46	185.5	178.9	445.2	178.4	186.3	428.1	171.2	193.8	410.9	164.4	201.5	394.5	157.8	209.6	378.7
	48	192.9	179.8	463.0	185.5	187.3	445.2	178.1	194.7	427.4	171.0	202.5	410.3	164.1	210.6	393.9
	50	200.6	180.7	481.5	192.9	188.2	463.0	185.2	195.7	444.5	177.8	203.6	426.7	170.7	211.7	409.6
5CPA182	40	169.3	186.8	406.3	162.8	194.6	390.7	156.3	202.3	375.1	150.0	210.4	360.1	144.0	218.8	345.7
	42	176.4	187.7	423.3	169.6	195.5	407.0	162.8	203.4	390.7	156.3	211.5	375.1	150.0	219.9	360.1
	44	183.7	188.7	440.9	176.6	196.5	423.9	169.6	204.4	407.0	162.8	212.5	390.7	156.3	221.0	375.1
	45	191.4	189.6	459.3	184	197.5	441.6	176.6	205.4	423.9	169.6	213.6	407.0	162.8	222.2	390.7
	46	199.0	190.5	477.6	191.4	198.5	459.3	183.7	206.4	440.9	176.4	214.7	423.3	169.3	223.3	406.3
	48	207.0	191.5	496.7	199.0	199.5	477.6	191.1	207.5	458.5	183.4	215.8	440.2	176.1	224.4	422.6
	50	215.3	192.5	516.6	207.0	200.5	496.7	198.7	208.5	476.9	190.7	216.8	457.8	183.1	225.5	439.5
5CPA194	40	181.8	198.9	436.4	174.8	207.2	419.6	167.8	215.4	402.8	161.1	224.1	386.7	154.7	233.0	371.2
	42	189.4	199.9	454.5	182.1	208.2	437.1	174.8	216.5	419.6	167.8	225.2	402.8	161.1	234.2	386.7
	44	197.3	200.9	473.5	189.7	209.2	455.3	182.1	217.6	437.1	174.8	226.3	419.6	167.8	235.4	402.8
	45	205.5	201.9	493.2	197.6	210.3	474.2	189.7	218.7	455.3	182.1	227.5	437.1	174.8	236.6	419.6
	46	213.7	202.9	512.9	205.5	211.4	493.2	197.3	219.8	473.5	189.4	228.6	454.5	181.8	237.7	436.4
	48	222.3	203.9	533.5	213.7	212.4	512.9	205.2	220.9	492.4	197.0	229.7	472.7	189.1	238.9	453.8
	50	231.2	204.9	554.8	222.3	213.5	533.5	213.4	222.0	512.1	204.8	230.9	491.6	196.7	240.1	472.0
5CPA206	40	186.2	203.0	447.0	179.1	211.5	429.8	171.9	220.0	412.6	165.0	228.8	396.1	158.4	237.9	380.2
	42	194.0	204.1	465.6	186.5	212.6	447.7	179.1	221.1	429.8	171.9	229.9	412.6	165.0	239.1	396.1
	44	202.1	205.1	485.0	194.3	213.6	466.3	186.5	222.2	447.7	179.1	231.1	429.8	171.9	240.3	412.6
	45	210.5	206.1	505.2	202.4	214.7	485.8	194.3	223.3	466.3	186.5	232.2	447.7	179.1	241.5	429.8
	46	218.9	207.1	525.4	210.5	215.8	505.2	202.1	224.4	485.0	194.0	233.4	465.6	186.2	242.7	447.0
	48	227.7	208.2	546.4	218.9	216.9	525.4	210.2	225.5	504.4	201.8	234.5	484.2	193.7	243.9	464.8
	50	236.8	209.2	568.3	227.7	217.9	546.4	218.6	226.7	524.6	209.8	235.7	503.6	201.4	245.1	483.4

- KW power input includes compressor and fan motor only and it does not include pump.
- Performance data are based on 9F water range in evaporator.

POWER SUPPLY
THIS WIRING DIAGRAM SUITS

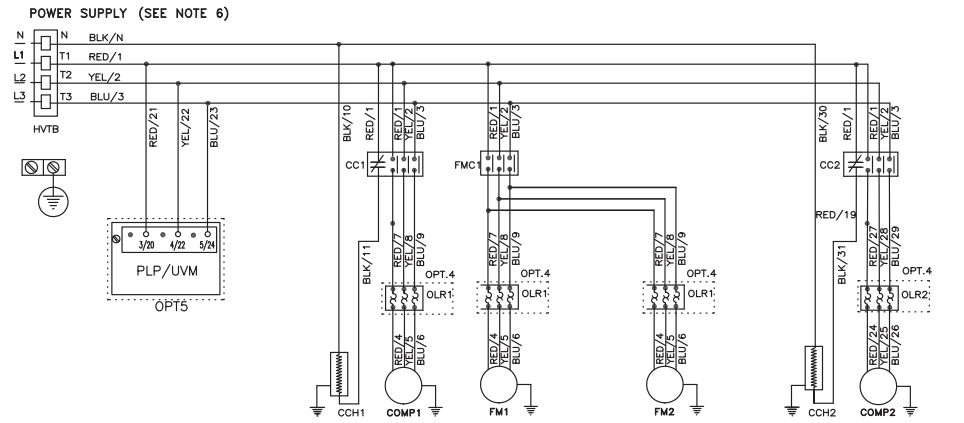
380–420 V / 3 PH / 50 HZ WITH NEUTRAL
380V / 3 PH / 60 HZ WITH NEUTRAL

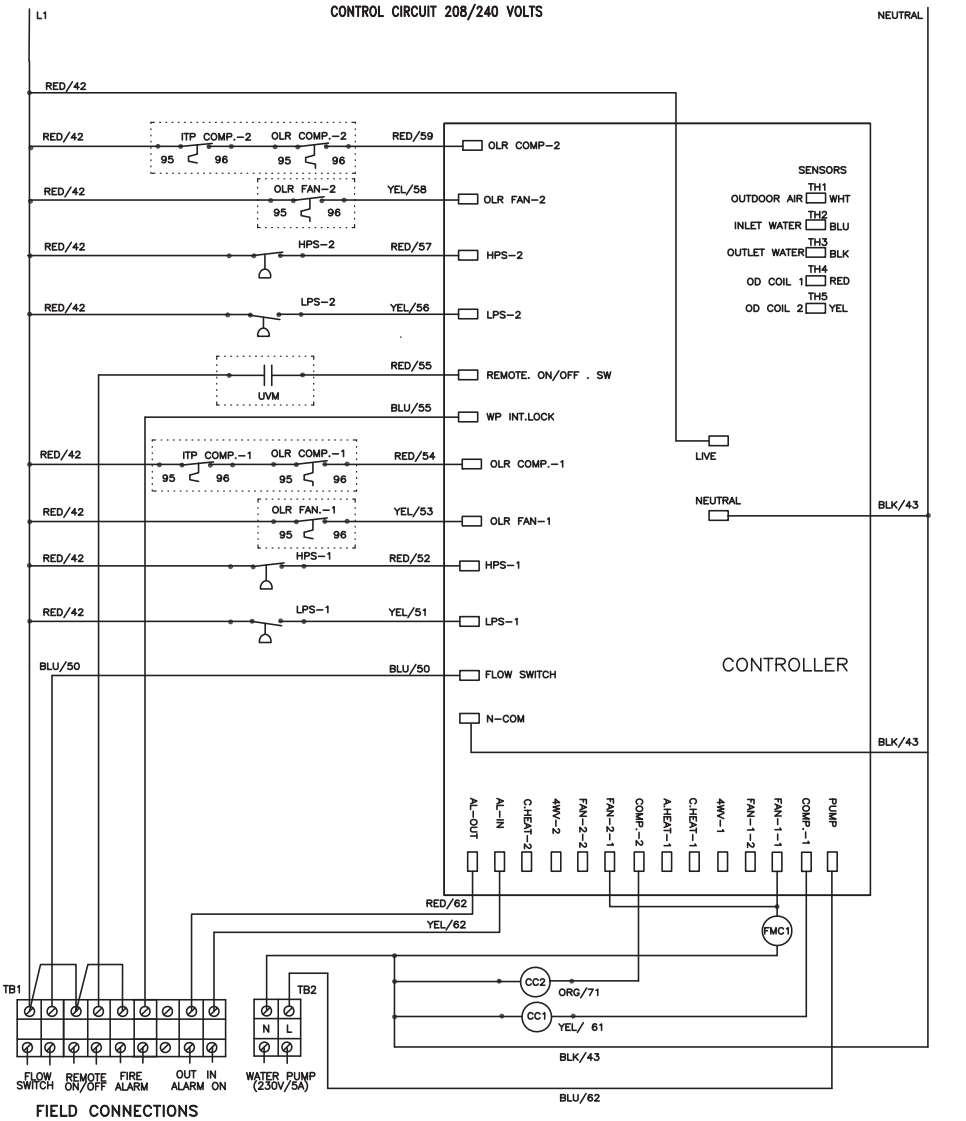
PL. REFER UNIT NAME PLATE FOR YOUR UNIT'S POWER SUPPLY

WIRING DIAGRAM FOR CHILLER UNITS

AWAL GULF MANUFACTURING Co. BSC (C)
SITRA, BAHRAIN.

WARNING
THIS UNIT IS BUILT AND WIRED ACCORDING TO COMPANY STANDARDS AND / OR JOB ORDER'S SPECIFICATIONS. ANY UNAUTHORISED CHANGE OR MODIFICATION WILL MAKE WARRANTY NULL & VOID.





LEGEND

BLK – BLACK
BLU – BLUE
BRN – BROWN
CC – COMP CONTACTOR
CCH – CRANK CASE HEATER
COM – COMMON
COMP – COMPRESSOR
CR – CONTROL RELAY
ES – EMERGENCY SWITCH
F – FUSE
FL.SW – FLOW SWITCH
FM – FAN MOTOR
FMC – FAN MOTOR CONTACTOR
HPS – HIGH PRESSURE SWITCH
HVTB – HIGH VOLTAGE TERMINAL BLOCK
L – LINE
LPR – LOW PRESSURE SW. RELAY
LPS – LOW PRESSURE SWITCH
LVTB – LOW VOLTAGE TERMINAL BLOCK
MCB – MAIN CIRCUIT BREAKER
N – NEUTRAL
NC – NORMALLY CLOSED
NO – NORMALLY OPEN
OLR – OVER LOAD RELAY
OPT – OPTIONAL
PD – PUMP DOWN SOLENOID
PLP – PHASE LOSS PROTECTION
PRI – PRIMARY
RED – RED
SEC – SECONDARY
ILS – INTERNAL LOCK SWIYCH OR FIRE ALARM
UVM – UNDER VOLTAGE MONITOR
WP – WATER PUMP
YC – COOLING RELAY
YEL – YELLOW
— — – FIELD WIRING
• – TERMINAL / SPLICE
····· – OPTIONAL MARKING
⏚ – E– EARTHING

NOTES

1) ANY WIRE REPLACEMENT SHOULD BE OF 90°C TYPE OR EQUALENT AND COPPER CONDUCTOR ONLY.
2) POWER MUST BE SUPPLIED TO CRANK CASE HEATER FOR A MINIMUM OF 12 HOURS PRIOR TO START UP. IF THE POWER SUPPLY HAS BEEN INTERRUPTED FOR LONGER PERIOD THEN AGAIN CRANK CASE HEATER MUST BE ENERGIZED FOR MINIMUM OF 12 HOURS BEFORE STARTING OF COMPRESSOR.
3) FUSED DISCONNECT SWITCH OR CIRCUIT BREAKER TO BE PROVIDED BY THE USER WITH RELEVENT RATING.
4) PLEASE ALLOW 2 TO 3 MINUTES BEFORE STARTING OF COMPRESSOR.
5) COMPRESSOR IS PROVIDED WITH INTERNAL OVERLOAD PROTECTION.
6) POWER CIRCUIT
   380–420 V/3PH/60HZ WITH NEUTRAL
   380V/3PH/60HZ WITH NEUTRAL
7) REFER INSTRUCTIONS WITH THE COMPONENTS FOR CONTROL LOGIC AND SETTING

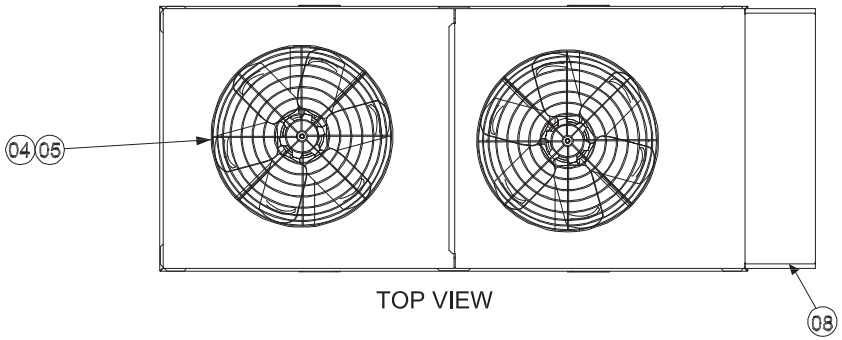
WIR.DIA–380V– CHR–MIC–PRO

C240109a	1BC011718–1	00

25, 30, 34TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

UNIT DIMENSIONS	
UNIT HEIGHT	1620 mm (WITH BASE)
UNIT HEIGHT	2480 mm
UNIT HEIGHT	1110 mm

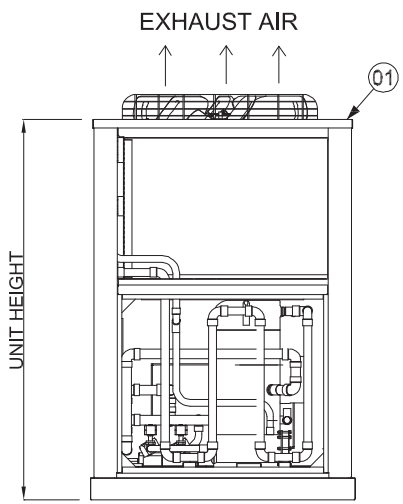
PRELIMINARY GA



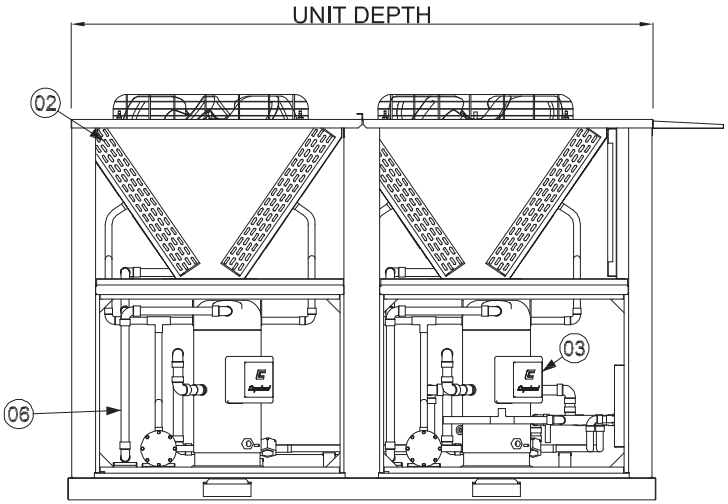
TOP VIEW

LEGENDS:

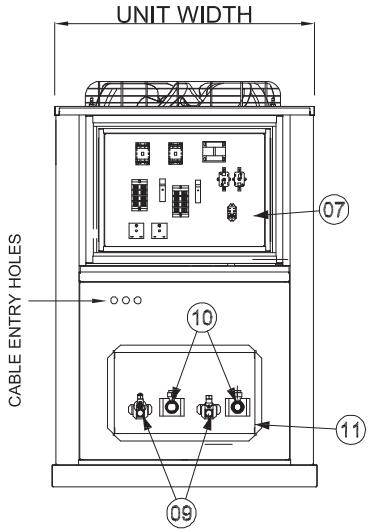
01. SHEET METAL BODY
02. "V" TYPE CONDENSER COILS (2NOS)
03. SCROLL COMPRESSORS (2NOS)
04. EXHAUST FAN WITH MOTOR (2NOS)
05. FAN GRILL
06. COMPRESSOR ACCESS
07. ELECTRICAL CONTROL BOX
08. RAIN CANOPY FOR CONTROL BOX
09. LIQUID SERVICE VALVES
10. SUCTION SERVICE VALVES
11. SERVICE VALVE BOX



LHS VIEW



FRONT VIEW

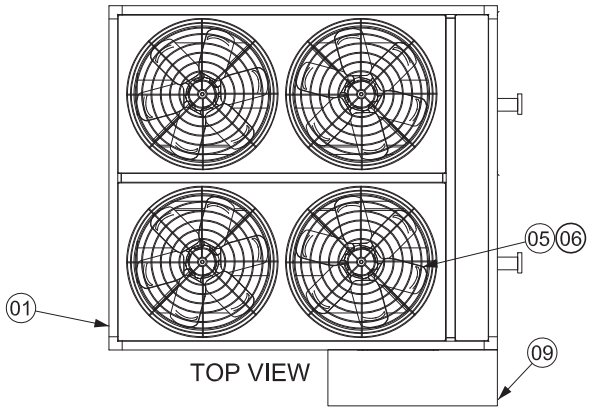


RHS VIEW

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

40, 46, 52TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

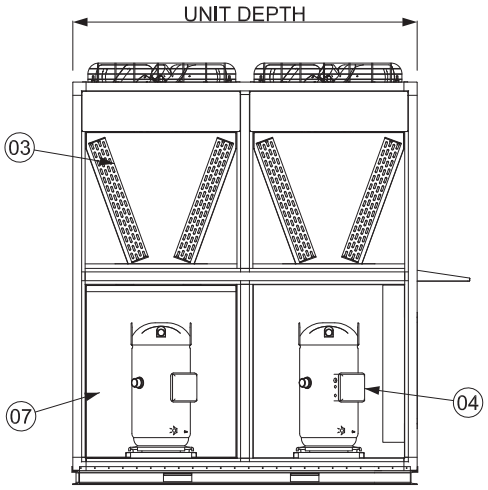
UNIT DIMENSIONS	
UNIT HEIGHT	2300 mm (WITH BASE)
UNIT DEPTH	2450 mm
UNIT WIDTH	2200 mm
BASE HEIGHT	100 mm
ALL PROFILE SIZE	45 mm (NORMAL)



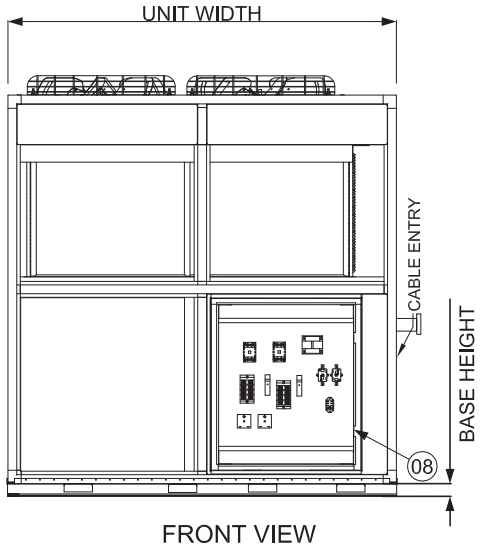
TOP VIEW

LEGENDS:

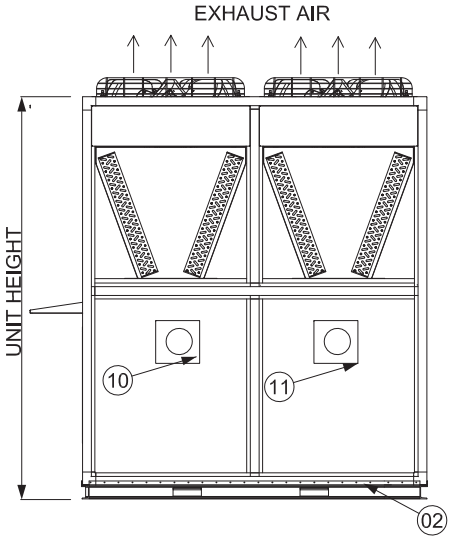
01. ALUMINIUM PROFILE BODY
02. MS STRUCTURAL UNIT BASE
03. "V" TYPE CONDENSER COILS(2NOS)
04. SCROLL COMPRESSORS(2NOS)
05. EXHAUST FAN WITH MOTOR(4NOS)
06. FAN GRILL
07. COMPRESSOR ACCESS
08. ELECTRICAL CONTROL BOX
09. RAIN CANOPY FOR CONTROL BOX
10. CHILLED WATER IN
11. CHILLED WATER OUT



LHS VIEW (COMPRESSOR ACCESS)



FRONT VIEW



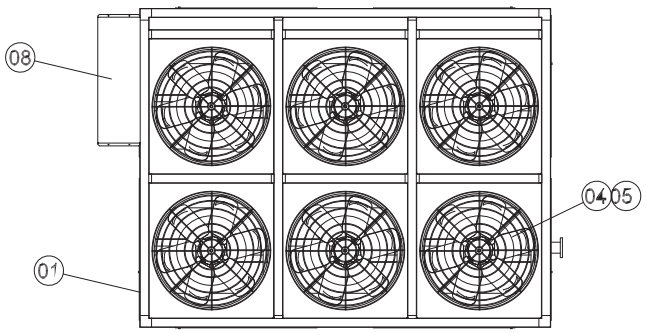
RHS VIEW (WATER CONNECTION)

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

59, 68, 79TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

UNIT DIMENSIONS	
**UNIT HEIGHT	**2300 mm (WITH BASE)
UNIT DEPTH	2900 mm
*UNIT WIDTH	*2250 mm
BASE HEIGHT	100 mm
ALL PROFILE SIZE	45 mm (THERMAL)

PRELIMINARY GA

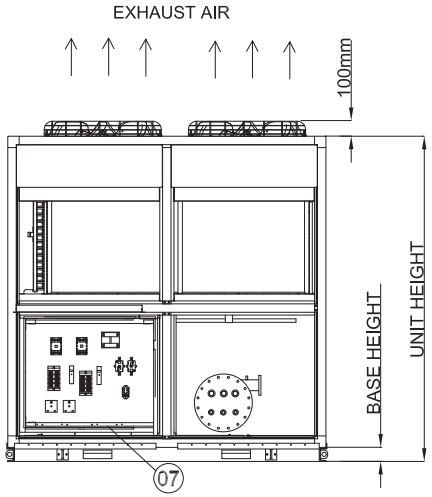


TOP VIEW

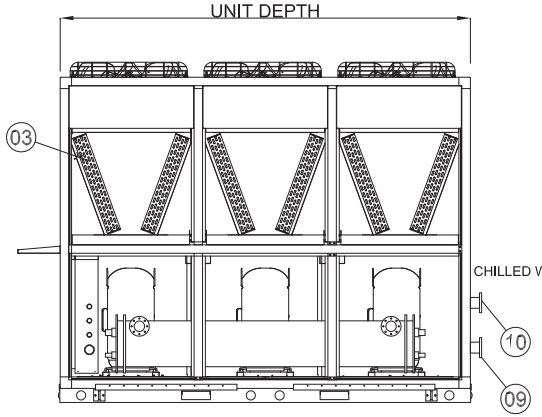
LEGENDS:

01. ALUMINIUM PROFILE BODY
02. MS STRUCTIRAL UNIT BASE
03. "V" TYPE CONDENSER COILS (3NOS)
04. EXHAUST FAN WITH MOTOR
05. FAN GRILL
06. COMPRESSOR ACCESS
07. ELECTRICAL CONTROL BOX
08. RAIN CANOPY FOR CONTROL BOX
09. CHILLED WATER IN
10. CHILLED WATER OUT

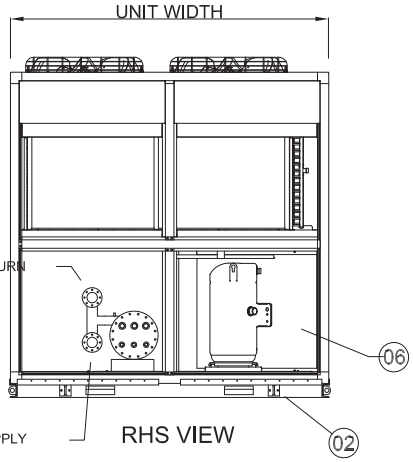
(SHELL & TUBE CHILLER PACKAGE TYPE)



LHS VIEW



FRONT VIEW



RHS VIEW

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

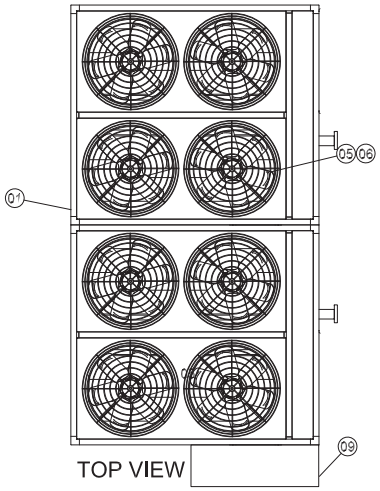
91, 103TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

UNIT DIMENSIONS	
UNIT HEIGHT	2300 mm (WITH BASE)
UNIT DEPTH	3900 mm
UNIT WIDTH	2200 mm
BASE HEIGHT	100 mm
ALL PROFILE SIZE	45 mm (NORMAL)

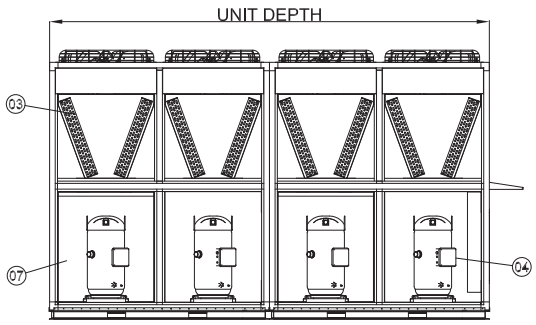
LEGENDS:

01. ALUMINIUM PROFILE BODY
02. MS STRUCTIRAL UNIT BASE
03. "V" TYPE CONDENSER COILS (4NOS)
04. SCROLL COMPRESSORS (4NOS)
05. EXHAUST FAN WITH MOTOR (8NOS)
06. FAN GRILL
07. COMPRESSOR ACCESS
08. ELECTRICAL CONTROL BOX
09. RAIN CANOPY FOR CONTROL BOX
10. WATER IN
11. WATER OUT

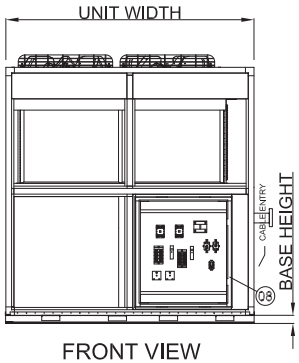
(SHELL & TUBE CHILLER PACKAGE TYPE)



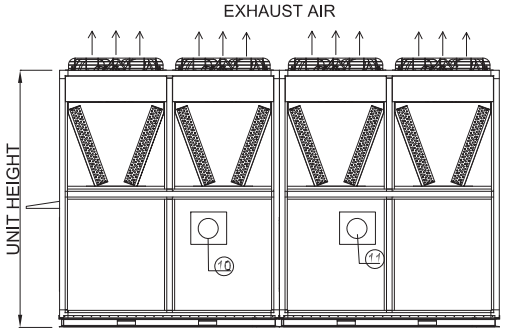
TOP VIEW



LHS VIEW (COMPRESSOR ACCESS)



FRONT VIEW

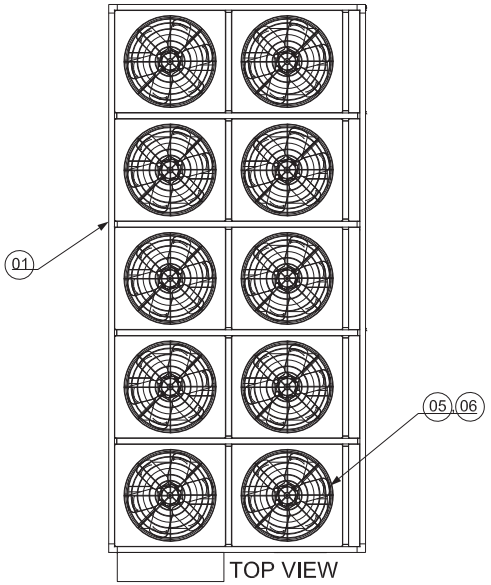


RHS VIEW (WATER CONNECTION)

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

119TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

UNIT DIMENSIONS	
UNIT HEIGHT	2300 mm (WITH BASE)
UNIT DEPTH	4825 mm
UNIT WIDTH	2262 mm
BASE HEIGHT	100 mm
ALL PROFILE SIZE	45 mm (NORMAL)

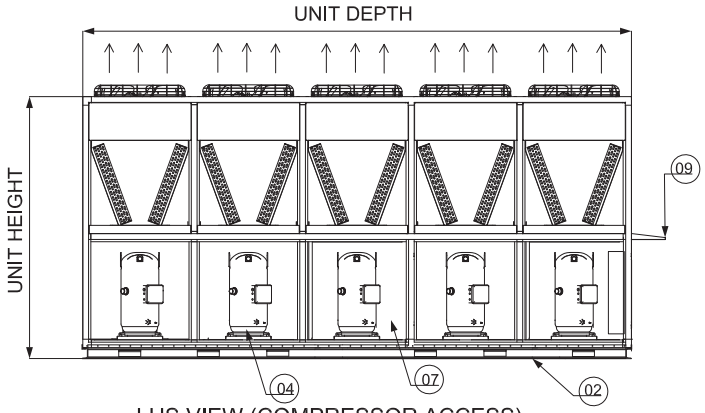


TOP VIEW

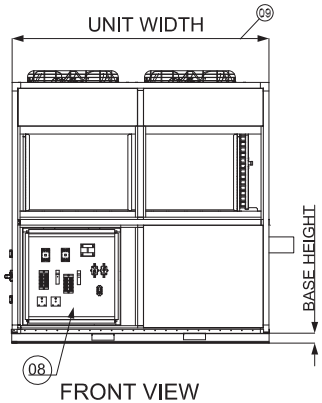
LEGENDS:

01. ALUMINIUM PROFILE BODY
02. MS STRUCTIRAL UNIT BASE
03. "V" TYPE CONDENSER COILS (5NOS)
04. SCROLL COMPRESSORS (5NOS)
05. EXHAUST FAN WITH MOTOR (10NOS)
06. FAN GRILL
07. COMPRESSOR ACCESS
08. ELECTRICAL CONTROL BOX
09. RAIN CANOPY FOR CONTROL BOX
10. WATER RETURN TO CHILLER
11. WATER SUPPLY FROM CHILLER

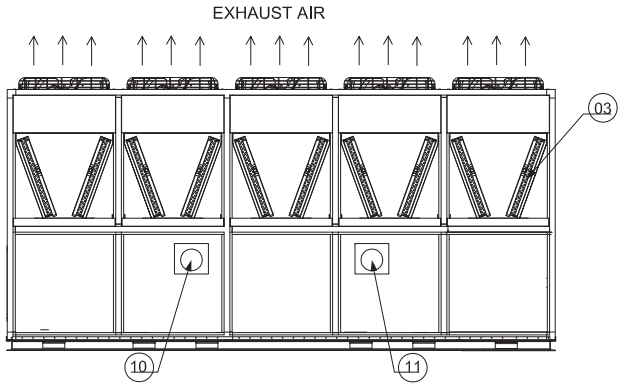
(SHELL & TUBE CHILLER PACKAGE TYPE)



LHS VIEW (COMPRESSOR ACCESS)



FRONT VIEW

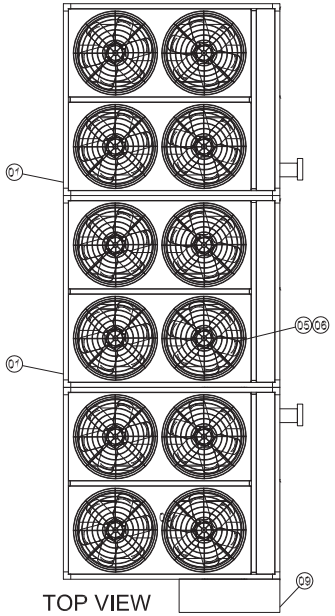


RHS VIEW (WATER CONNECTION)

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

131, 143, 155TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

UNIT DIMENSIONS	
UNIT HEIGHT	2300 mm (WITH BASE)
UNIT DEPTH	5850 mm
UNIT WIDTH	2200 mm
BASE HEIGHT	100 mm
ALL PROFILE SIZE	45 mm (NORMAL)

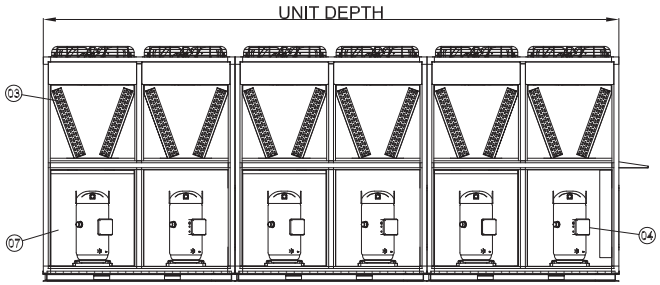


TOP VIEW

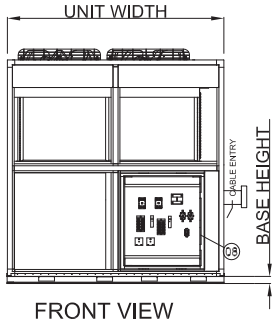
LEGENDS:

01. ALUMINIUM PROFILE BODY
02. MS STRUCTIRAL UNIT BASE
03. "V" TYPE CONDENSER COILS (6NOS)
04. SCROLL COMPRESSORS (6NOS)
05. EXHAUST FAN WITH MOTOR (12NOS)
06. FAN GRILL
07. COMPRESSOR ACCESS
08. ELECTRICAL CONTROL BOX
09. RAIN CANOPY FOR CONTROL BOX
10. WATER IN
11. WATER OUT

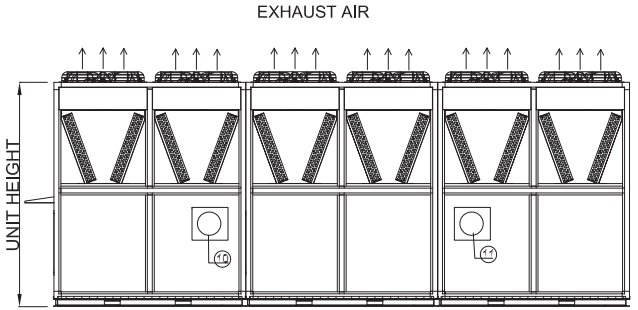
(SHELL & TUBE CHILLER PACKAGE TYPE)



LHS VIEW (COMPRESSOR ACCESS)



FRONT VIEW



RHS VIEW (WATER CONNECTION)

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

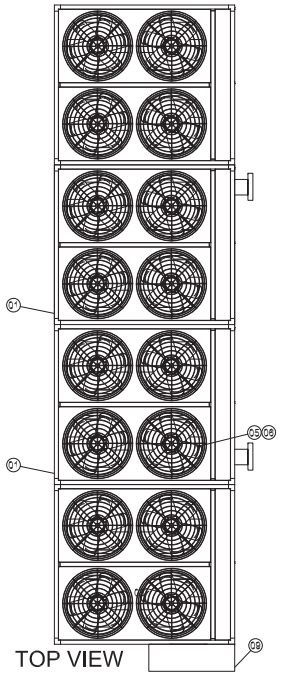
171, 182TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

UNIT DIMENSIONS	
UNIT HEIGHT	2300 mm (WITH BASE)
UNIT DEPTH	7200 mm
UNIT WIDTH	2200 mm
BASE HEIGHT	100 mm
ALL PROFILE SIZE	45 mm (NORMAL)

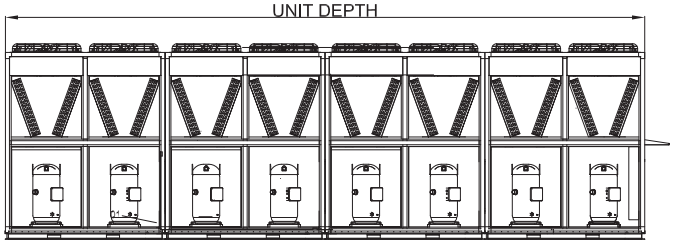
LEGENDS:

01. ALUMINIUM PROFILE BODY
02. MS STRUCTIRAL UNIT BASE
03. "V" TYPE CONDENSER COILS (8NOS)
04. SCROLL COMPRESSORS (8NOS)
05. EXHAUST FAN WITH MOTOR (16NOS)
06. FAN GRILL
07. COMPRESSOR ACCESS
08. ELECTRICAL CONTROL BOX
09. RAIN CANOPY FOR CONTROL BOX
10. WATER IN
11. WATER OUT

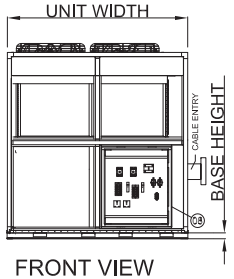
(SHELL & TUBE CHILLER PACKAGE TYPE)



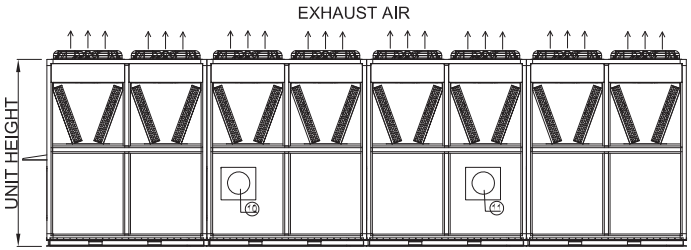
TOP VIEW



LHS VIEW (COMPRESSOR ACCESS)



FRONT VIEW



RHS VIEW (WATER CONNECTION)

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

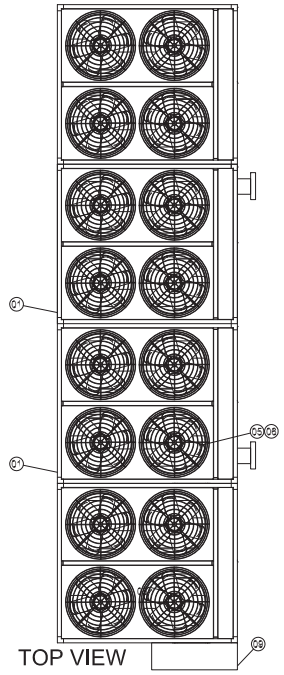
194, 206TR SHEL & TUBE CHILLER MODEL GENERAL ARRANGEMENT LAYOUT

UNIT DIMENSIONS	
UNIT HEIGHT	2300 mm (WITH BASE)
UNIT DEPTH	7800 mm
UNIT WIDTH	2200 mm
BASE HEIGHT	100 mm
ALL PROFILE SIZE	45 mm (NORMAL)

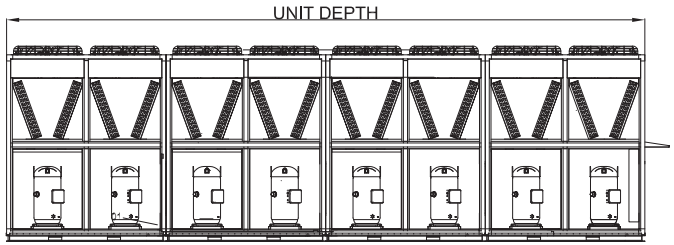
LEGENDS:

01. ALUMINIUM PROFILE BODY
02. MS STRUCTIRAL UNIT BASE
03. "V" TYPE CONDENSER COILS (8NOS)
04. SCROLL COMPRESSORS (8NOS)
05. EXHAUST FAN WITH MOTOR (16NOS)
06. FAN GRILL
07. COMPRESSOR ACCESS
08. ELECTRICAL CONTROL BOX
09. RAIN CANOPY FOR CONTROL BOX
10. WATER IN
11. WATER OUT

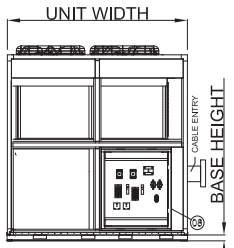
(SHELL & TUBE CHILLER PACKAGE TYPE)



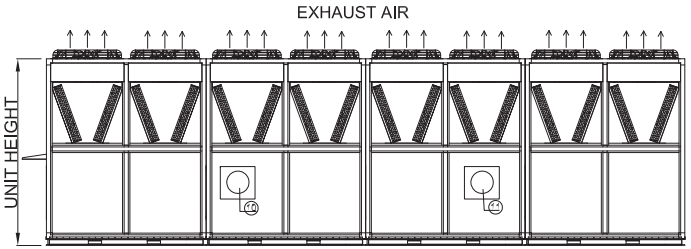
TOP VIEW



LHS VIEW (COMPRESSOR ACCESS)



FRONT VIEW

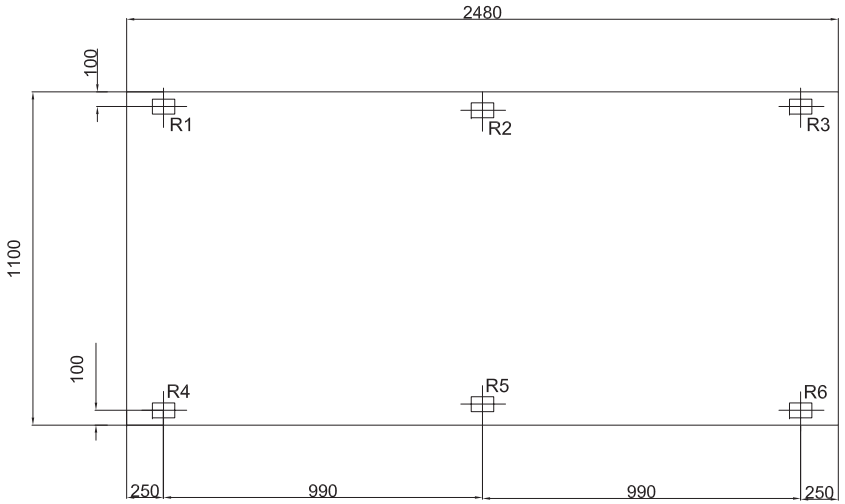


RHS VIEW (WATER CONNECTION)

* LAYOUT ARE SUBJECT TO CHANGE WITHOUT NOTICE IN ACCORDANCE WITH OUR POLICY OF CONTINUOUS RESEARCH AND PRODUCT DEVELOPMENT".

MOUNTING DETAILS

25TR, 30TR, 34TR - CHILLER



NOTE: DIMENSIONS IN (mm)

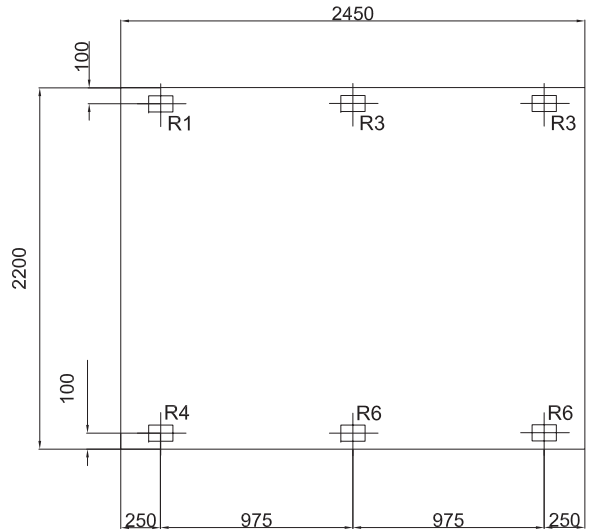
LOAD DISTRIBUTION (Kg)	
25TR-CHILLER	
R1	180
R2	155
R3	180
R4	180
R5	155
R6	180

LOAD DISTRIBUTION (Kg)	
30TR-CHILLER	
R1	190
R2	167
R3	190
R4	190
R5	167
R6	190

LOAD DISTRIBUTION (Kg)	
34TR-CHILLER	
R1	196
R2	173
R3	196
R4	196
R5	173
R6	196

MOUNTING DETAILS

40TR, 46TR, 52TR - CHILLER



NOTE: DIMENSIONS IN (mm)

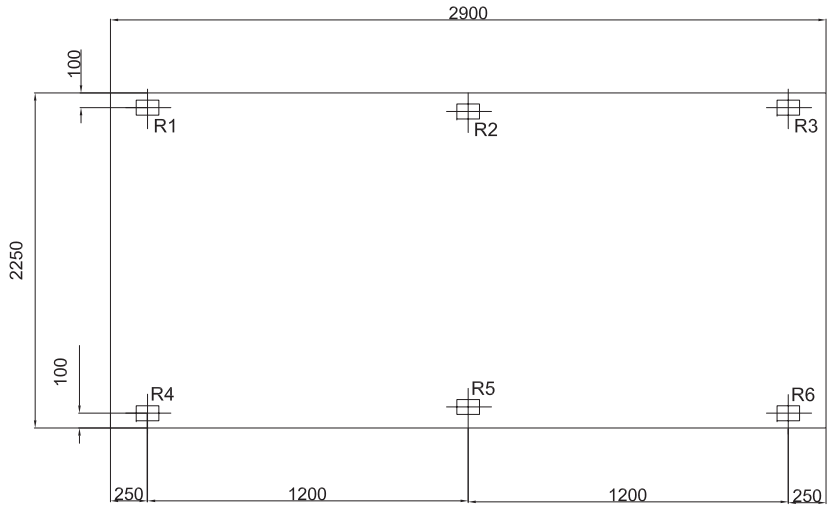
LOAD DISTRIBUTION (Kg)	
40TR-CHILLER	
R1	333
R2	311
R3	333
R4	333
R5	311
R6	333

LOAD DISTRIBUTION (Kg)	
46TR-CHILLER	
R1	335
R2	312
R3	335
R4	335
R5	312
R6	335

LOAD DISTRIBUTION (Kg)	
52TR-CHILLER	
R1	338
R2	314
R3	338
R4	338
R5	314
R6	338

MOUNTING DETAILS

59TR, 68TR, 79TR - CHILLER



NOTE: DIMENSIONS IN (mm)

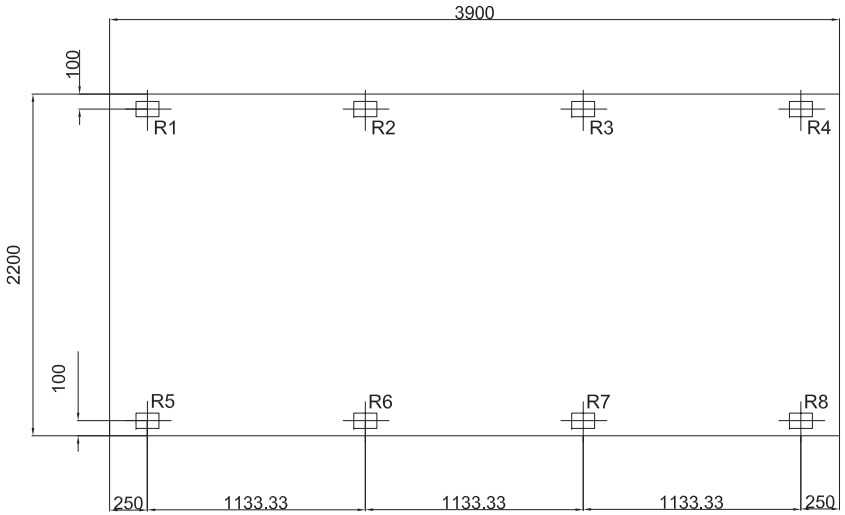
LOAD DISTRIBUTION (Kg)	
59TR-CHILLER	
R1	420
R2	395
R3	420
R4	420
R5	395
R6	420

LOAD DISTRIBUTION (Kg)	
68TR-CHILLER	
R1	421
R2	397
R3	421
R4	421
R5	397
R6	421

LOAD DISTRIBUTION (Kg)	
79TR-CHILLER	
R1	427
R2	402
R3	427
R4	427
R5	402
R6	427

MOUNTING DETAILS

91TR, 103TR - CHILLER

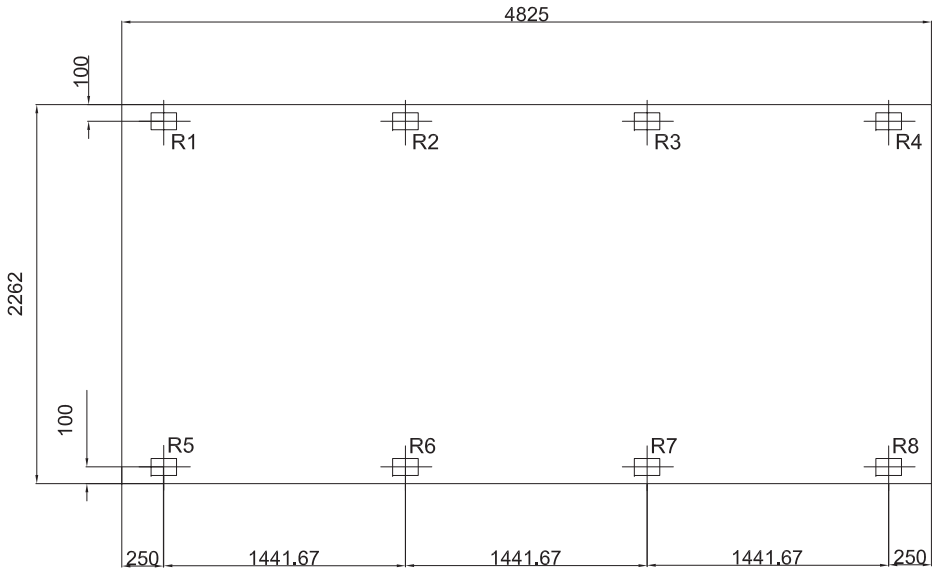


LOAD DISTRIBUTION (Kg)	
91TR-CHILLER	
R1	395
R2	370
R3	370
R4	395
R5	395
R6	370
R7	370
R8	395

LOAD DISTRIBUTION (Kg)	
103TR-CHILLER	
R1	409
R2	384
R3	384
R4	409
R5	409
R6	384
R7	384
R8	409

NOTE: DIMENSIONS IN (mm)

MOUNTING DETAILS
119TR - CHILLER

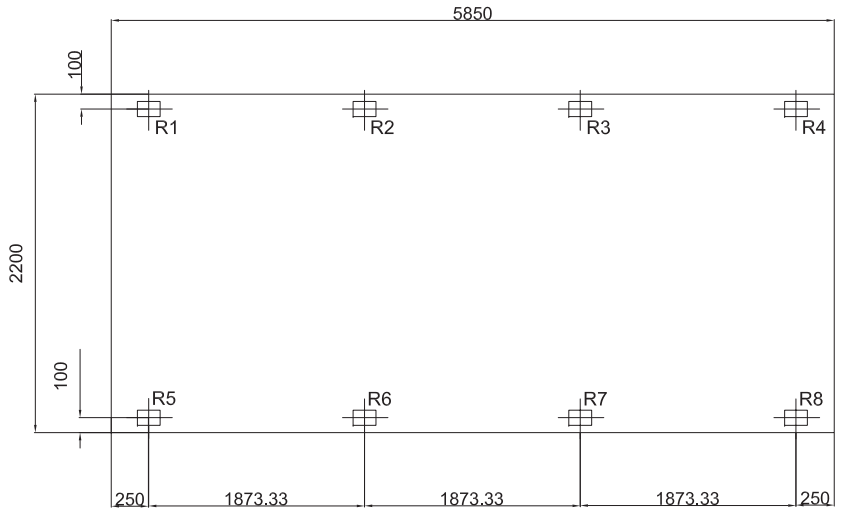


LOAD DISTRIBUTION (Kg)	
119TR-CHILLER	
R1	582
R2	558
R3	558
R4	582
R5	582
R6	558
R7	558
R8	582

NOTE: DIMENSIONS IN (mm)

MOUNTING DETAILS

131TR, 143TR, 155TR - CHILLER



NOTE: DIMENSIONS IN (mm)

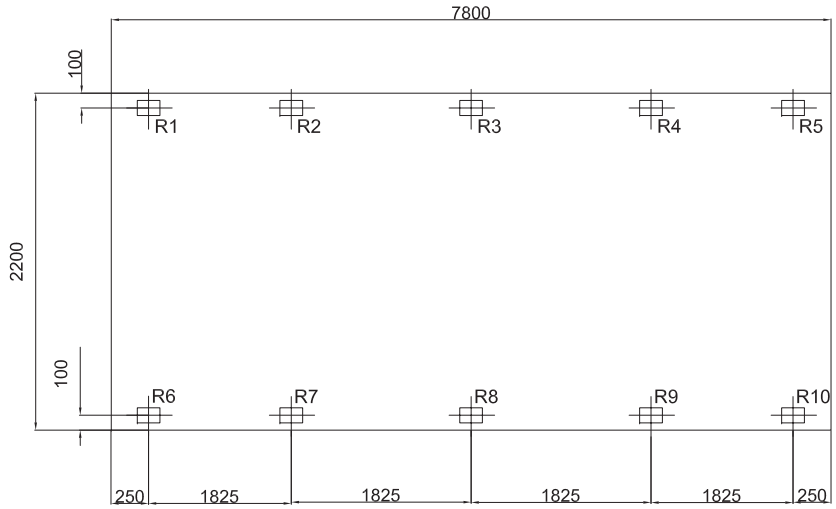
LOAD DISTRIBUTION (Kg)	
131TR-CHILLER	
R1	665
R2	640
R3	640
R4	665
R5	665
R6	640
R7	640
R8	665

LOAD DISTRIBUTION (Kg)	
143TR-CHILLER	
R1	672
R2	648
R3	648
R4	672
R5	672
R6	648
R7	648
R8	672

LOAD DISTRIBUTION (Kg)	
155TR-CHILLER	
R1	675
R2	650
R3	650
R4	675
R5	675
R6	650
R7	650
R8	675

MOUNTING DETAILS

194TR, 206TR - CHILLER



LOAD DISTRIBUTION (Kg)	
194TR-CHILLER	
R1	767
R2	743
R3	743
R4	743
R5	767
R6	767
R7	743
R8	743
R9	743
R10	767

LOAD DISTRIBUTION (Kg)	
206TR-CHILLER	
R1	770
R2	744
R3	744
R4	744
R5	770
R6	770
R7	744
R8	744
R9	744
R10	770

NOTE: DIMENSIONS IN (mm)

Authorised Distributors

Approvals*

علامة الجودة الإماراتية
Emirates Quality Mark

UL®

SASO

*CE Certified in conformity with the following standard (s)
EN55014(1993) following the provisions of EMC Directive 89/336/EEC
EN60555-2(1987) as amended by 92/31/EEC and 93/68/EEC

LVD
Low Voltage Directive

MANAGEMENT SYSTEM CERTIFICATION
ISO 9001 + ISO 14001
DNV
MGMT. SYS.
RvA C024

AWAL GULF
MANUFACTURING Co. B.S.C. (C)
Post Box 15919, Manama, Kingdom of Bahrain
Tel: 17 738333, Fax: 17 731541 / 17 731529
E-mail:export@awalgulf.com.bh Website: www.awalgulf.com

* Approvals are products-specific. For further details contact: export@awalgulf.com.bh