FUJIAIR
AIR-CONDITIONERS

AIR COOLED MINI&MODULE WATER CHILLER & HEAT PUMP

FUJIAIR GROUP COMPANY

About us

Fujiair group is located in the beautiful solar city Dezhou which is situated in the northwest of Shandong province. The Beijing-Shanghai high-speed railway and Beijing-Shanghai expressway which spread across the city make the city a main coordinate of national economic main artery.

The registered capital of group company is RMB100 million, covering an area of 300,000㎡ with modern workshops and office buildings of more than 180,000㎡. Fujiair Group consists of the following companies:

German Aero Phoenix commercial trading company;

Shandong Fujiair Air conditioning Co.,Ltd;

Beijing Ainuofeili Trading Co.,Ltd;

Shandong Fujiair New Energy Technology Co.,Ltd;

Shandong Fujiair Mechanical and Electrical Equipment installation Co.,Ltd.;

Dezhou Fujiair Purfying Air Conditioning Co.,Ltd.

A.Main Business scope

1.Chiller and heat pump series:

* Water-cooled series: Centrifugal cold(hot)water units,Screw Ground(water)source heat(cold)units, Scroll Ground(water)source heat(cold)units,Water loop units.

* Air-cooled series: Screw cold(hot) water units,Module cold(hot) water units,Villa-use cold(hot) water unit,VRV series units, Rooftop packaged unit, Rooftop split unit.

* Unit style series: Constant temperature humidity units,Air(water) cooling unitary air conditioning units, Dehumidification units.

2.Terminal series: Puffy Air Conditioning,Combined air handling unit,Fresh air handing units, Fan Coil

Series.

3.Ventilation series: Fire fighting exhaust fan, Roof ventilator Axial flow fan,Diagonal fan,centrifugal fan and so on.

4.Cooling tower series:All kinds of FRP draft cooling tower,Stainless steel cooling tower.

5.Air-conditioning auxiliary:Cyclone desander, Water knockout drum(collector),Dirt separator,Water Softener Plant,Plate heat exchanger units, Constant pressure equipment.

6.Air Conditioning Parts:All kinds of fire dampers,Regulating valves, Tuyere series.

7.Other products:Low temperature industrial water chiller units, Freezing and refrigerating equipment ,Planting and breeding air-conditioning equipment.

B. Engineering construction:

Mechanical and electrical equipment installation,Fire engineering,Decoration and cecorating, Equipment Maintenance and Repair, and all kinds of qualifications related to those above mentioned.






Modern workshop

Opening ceremony


Engineer team


National class testing center

Products Description

a>With functions of reverse cycle automatic defrosting, double steps automatic anti-freezing, built-in self-diagnosable system, and microcomputer control. It can be applicable to hotels, villas, hospitals, cinemas, stadiums, recreations, office blocks, factories and so on. It can also provide chilled water or moderate hot water for industrial purpose.

b>The unit is installed at outdoor such as roof, floor and porch and does not need machine room, which saves user's initial investment cost. And also, the unit is easy to install, manage and maintain.

c>Modular design, master module can work independently or together with up to 7 slave modules, capacity from 60kw to 980kw. Each of the refrigeration system can be independent, can be spared to each other. Any cooling loop barriers have occurred does not affect the normal operation of the other loop; so that the unit can be a standard module for the production and transport, on the construction site it can be installed into a complete unit,the standard module has the characteristic of light weight, small size.

d> Excellent performance, Security and Reliable

<1> Compressor: Famous brand high-efficiency scroll type compressor

<2> Evaporator:Plate type and Shell & tube type, with high-efficiency inner-grooved copper pipe, low flow resistance.

<3> Condenser

High-efficiency inner-grooved copper pipe and high quality aluminum fins.

<4> Control system

Famous brand micro-computerized controller, working temp. from -15℃ ~55℃.

<5> Import parts

Use famous brand parts, ensure high quality.

<6> Protection devices

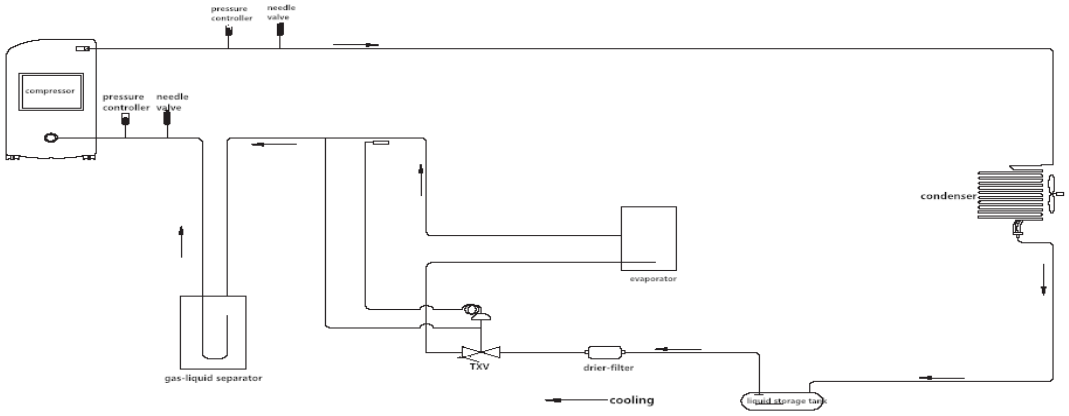
High &low voltage protection; Anti-freezing protection; Temperature control; Owe anti-phase protection; High & low pressure protection; High pressure exhaust temperature protection; Built-in motor overheating protection; Over-current protection.

Danfoss

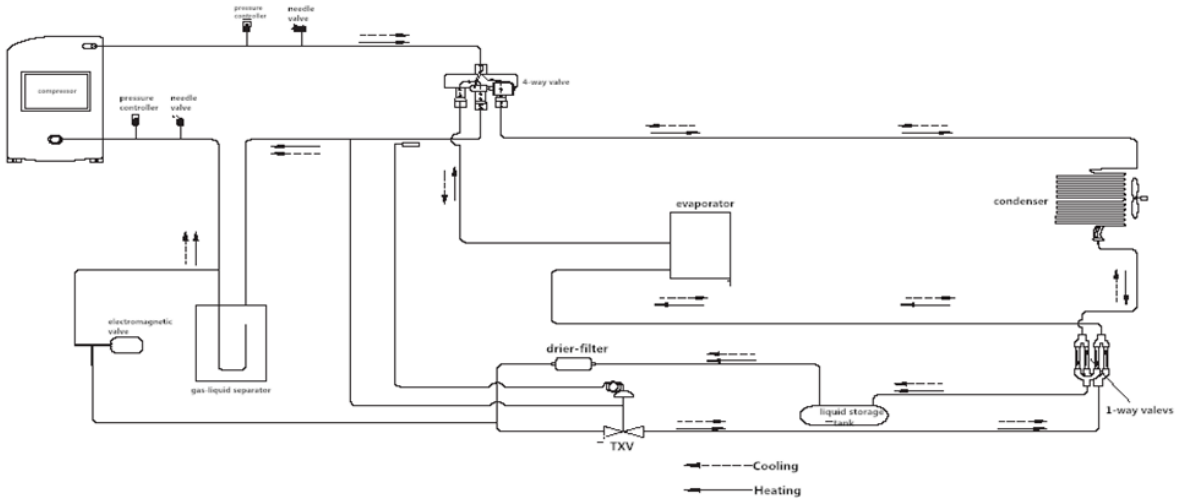
<7> Heat recovery function and ultra-low temperature type chiller are for choosing.

Schematic diagram

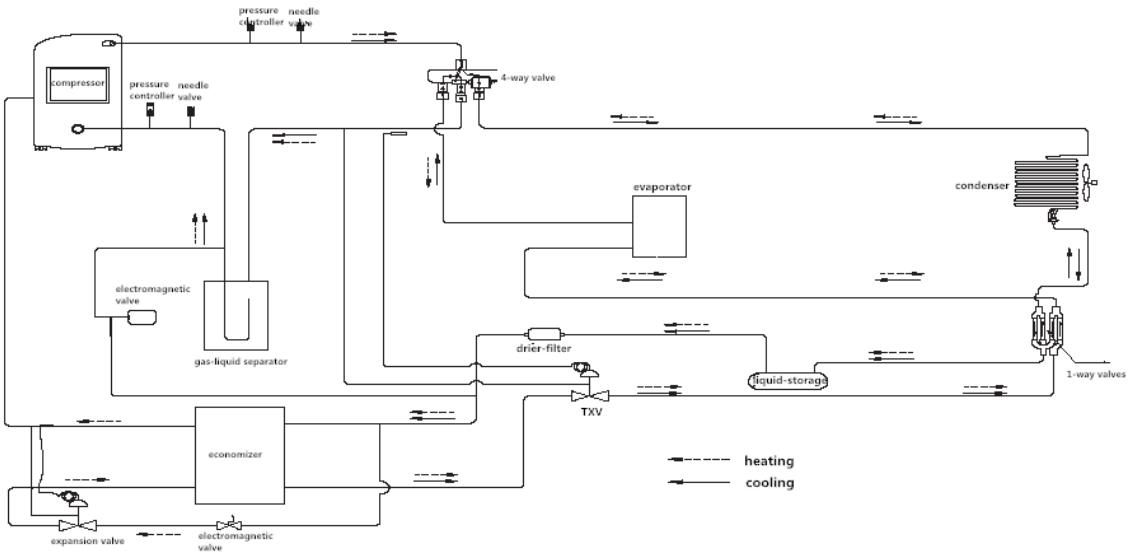
Cooling only unit



Heat pump unit



Ultralow temperature heat pump unit



TECHNICAL SPECIFICATION

Mini Type:

No. / Model			RLSFW010 / RLSFW010R	RLSFW015 / RLSFW015R	RLSFW020 / RLSFW020R	RLSFW025 / RLSFW025R	RLSFW035 / RLSFW035R	RLSFW045 / RLSFW045R
Cooling capacity		KW	9.5	14.9	18.2	23.1	32.8	46.2
		RT	2.8	4.2	5.2	6.6	9.2	13.2
Heating capacity		KW	10.3	16.4	21.4	24.6	35.9	49.2
		RT	3	4.6	6	7	10	14
Input power		KW	3.5	5.2	5.7	7.6	11.7	15.1
Power supply			220V / 1PH / 50HZ	380V / 3PH / 50HZ				
Compressor	Type		Hermetic Scroll Type					
	Qty		1	1	1	1	1	2
	Start model		Directly Start					
	Refrigerant	Control type	R22 / R407C					
		Charge (kg)	2.4	2.8	4.2	6	11.5	12
		Control	TXV					
Evaporator	Type		Stainless steel plate type					
	Pressure drop	KPa	70~90					
	Main water pipe connection size		DN25	DN25	DN32	DN32	DN50	DN60
	Water flow	m³/h	1.6	2.6	3.1	4	5.6	7.9
Condenser	Type		Inner grooved copper tube with hydrophilic aluminum fins					
	Condenser fan		1	1	1	1	2	2
Dimension	L	mm	840	840	1100	1100	1100	2200
	W	mm	600	600	720	720	720	720
	H	mm	1700	1700	1870	1870	1870	1920
Net weight		KG	185	240	320	350	380	450
Running weight		KG	200	260	360	380	420	490
Noise		dB(A)	65	66	66	66	67	69
Main protection measures			1.High &low voltage protection; 2.Anti-freezing protection; 3.Temperature control; 4.Owe anti-phase protection; 5.High & low pressure protection; 6.High pressure exhaust temperature protection; 7.Built-in motor overheating protection; 8.Over-current protection; 9. Safe valve; 10.Check valve					

Notes:

1) Cooling: Ambient temperature DB 35 ℃, WB 24 ℃35℃; water in/out 12/7 ℃;

2) Heating: Ambient temperature DB 7 ℃, WB 6 ℃; water in/out temperature 40/45 ℃;

3) Top discharge is optional, 30% or 100% heat recovery is optional function;

4) Sound pressure measured at a distance of 1 m and a height of 1.5 m above the ground in a dear field;

5) Built-in water pump and expansion tank is optional.

TECHNICAL SPECIFICATION

Modular Scroll Type:

No. / Model			RLSFW060 / RLSFW060R	RLSFW068 / RLSFW068R	RLSFW090 / RLSFW090R	RLSFW136 / RLSFW136R
Cooling capacity		KW	60	68	96	136
		RT	17	20	27	40
Heating capacity		KW	64	69	100	138
		RT	18	20	28	40
Input power		KW	21	21.5	29.8	43
Power supply			380V / 3PH / 50HZ			
Compressor	Type		Hermetic Scroll Type			
	Qty		4	2	3	4
	Start model		Directly Start			
	Refrigerant	Type	R22 / R407C/R410A			
		Charge (kg)	4x4	11x2	6.5x3	6.5x4
		Control	Capillary tube	TXV	TXV	TXV
Evaporator	Type		Shell & Tube			
	Pressure drop	KPa	70			
	Main water pipe connection size		DN50	DN50	DN50	DN65
	Water flow	m^3/h	10.3	11.7	16.5	23.4
Condenser	Type		Inner grooved copper tube with hydrophilic aluminum fins			
	Condenser fan		2	2	2	4
Dimension	L	mm	2110	2110	2110	2110
	W	mm	1080	1080	1080	2160
	H	mm	1870	1870	1980	1920
Net weight		KG	660	700	780	1360
Running weight		KG	720	760	840	1480
Noise		dB(A)	68	70	71	73
Main protection measures			1.High &low voltage protection; 2.Anti-freezing protection; 3.Temperature control; 4.Owe anti-phase protection; 5.High & low pressure protection; 6.High pressure exhaust temperature protection; 7.Built-in motor overheating protection; 8.Over-current protection; 9. Safe valve; 10.Check valve			

Notes:

1)Cooling: Ambient temperature DB 35 ℃, WB 24 ℃; water in/out 12/7 ℃;

2) Heating: Ambient temperature DB 7 ℃, WB 6 ℃; water in/out temperature 40/45 ℃;

3) Units above can realize 1-7 units' modular connection and can control energy-regulation automatically;

4) Sound pressure measured at a distance of 1 m and a height of 1.5 m above the ground in a dear field;

5) Built-in water pump and expansion tank is optional.

TECHNICAL SPECIFICATION				
Ultralow temperature heat pump				
No. / **Model**			RLSFW068R	RLSFW136R
Cooling capacity		KW	68	136
		RT	20	40
Heating capacity		KW	69	138
		RT	20	40
Input power		KW	21.5	43
Operating Temperature			-15~46℃	
Power supply			380V / 3PH / 50HZ	
Compressor	Type		EVI Hermetic Scroll Type	
	Qty		2	4
	Start model		Directly Start	
	Refrigerant	Type	R22 /R410A	
		Charge (kg)	11x2	6.5x4
		Control	TXV	TXV
Evaporator	Type		Shell & Tube	
	Pressure drop	KPa	70	
	Main water pipe connection size		DN50	DN65
	Water flow	m^3/h	11.7	23.4
Condenser	Type		Inner grooved copper tube with hydrophilic aluminum fins	
	Condenser fan		2	4
Dimension	L	mm	2110	2110
	W	mm	1080	2160
	H	mm	1870	1920
Net weight		KG	700	1360
Running weight		KG	760	1480
Noise		dB(A)	70	73
Main protection measures			1.High &low voltage protection; 2.Anti-freezing protection; 3.Temperature control; 4.Owe anti-phase protection; 5.High & low pressure protection; 6.High pressure exhaust temperature protection; 7.Built-in motor overheating protection; 8.Over-current protection; 9. Safe valve; 10.Check valve	

Notes:

1)Cooling: Ambient temperature DB 35 ℃, WB 24 ℃; water in/out 12/7 ℃;

2) Heating: Ambient temperature DB 7 ℃, WB 6 ℃; water in/out temperature 40/45 ℃;

3) Units above can realize 1-7 units' modular connection and can control energy-regulation automatically;

4) Sound pressure measured at a distance of 1 m and a height of 1.5 m above the ground in a dear field;

5) Built-in water pump and expansion tank is optional.

TECHNICAL SPECIFICATION							
Hot water heat pump							
No. / **Model**			RLSFW011R	RLSFW020R	RLSFW035R	RLSFW040R	RLSFW080R
Rated heating capacity		KW	11	20	35	40	80
		RT	3	5.5	10	11	22
Rated input power		KW	3.09	5.41	9.46	10.81	21.62
Hot water temperature			55℃				
Operating temperature			-10~43℃				
Power supply			380V / 3PH / 50HZ				
Compressor	Type		EVI Hermetic Scroll Type				
	Qty		1	1	1	1	2
	Start model		Directly Start				
	Refrigerant	Type	R22 / R407C				
		Charge (kg)	3	5.4	9	10.5	21
		Control	TXV				
Evaporator	Type		Stainless steel plate type				
	Pressure drop	KPa	30~55				
	Main water pipe connection size		DN25	DN32	DN32	DN40	DN50
	Water flow	m^3/h	1.94	3.52	6.16	7.04	14.08
	Hot water flow	m^3/h	0.24	0.44	0.77	0.88	1.76
Condenser	Type		Inner grooved copper tube with hydrophilic aluminum fins				
	Condenser fan		1	1	1	1	2
Dimension	L	mm	840	1100	1100	1100	2110
	W	mm	600	720	720	720	1080
	H	mm	1700	1870	1870	1870	1870
Net weight		KG	185	300	350	380	700
Running weight		KG	200	330	380	420	760
Noise		dB(A)	65	66	66	67	70
Main protection measures			1.High &low voltage protection; 2.Anti-freezing protection; 3.Temperature control; 4.Owe anti-phase protection; 5.High & low pressure protection; 6.High pressure exhaust temperature protection; 7.Built-in motor overheating protection; 8.Over-current protection; 9. Safe valve; 10.Check valve				

Notes:

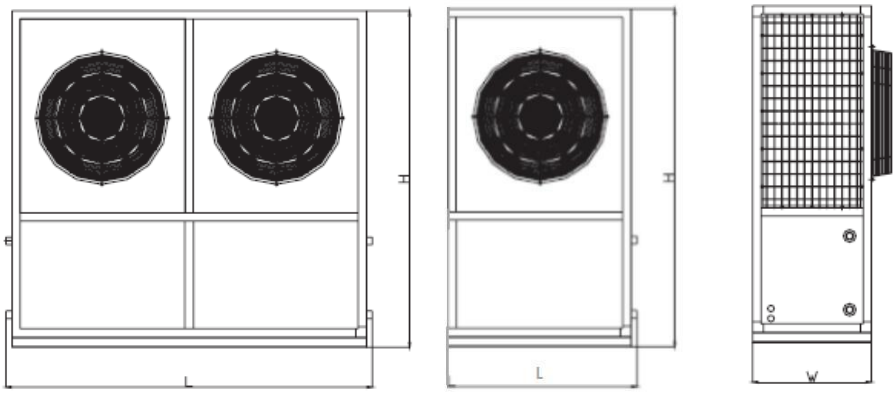
1) Heating: Ambient temperature DB 20 ℃, WB 15 ℃; heating capacity will be depend on ambient temperature and humidity;

2) Sound pressure measured at a distance of 1 m and a height of 1.5 m above the ground in a dear field.

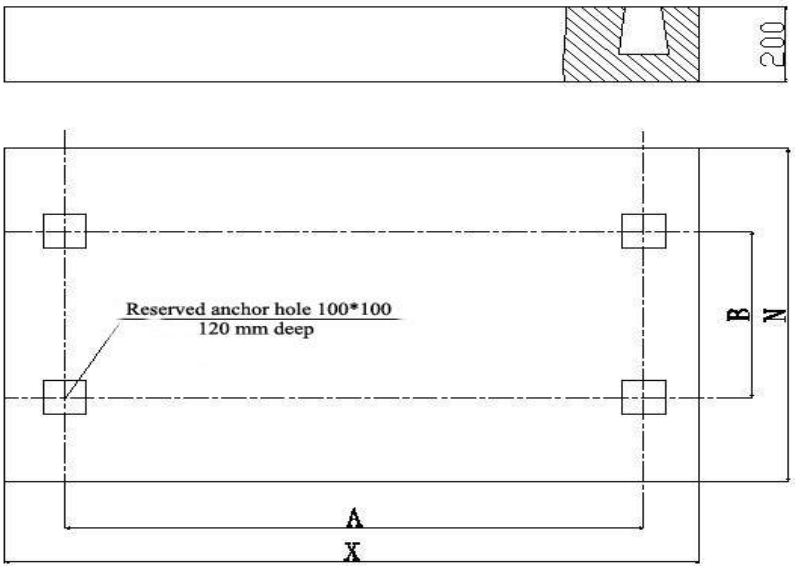
3) Built-in water pump and expansion tank is optional.

Unit dimension and foundation
Mini Type

Unit dimension:mm



Unit foundation:mm



	10~15	20~35	45
X	1040	1300	2400
A	740	1000	2100
N	800	920	920
B	850	770	770

Note:

1. The foundation may (must be 150-300mm higher than ground level) be the concrete structure or the steel frame, and keep the foundation surface must be smooth.

2. Add a 20~30mm rubber shock pad between the unit and the foundation.

3. Design the foundation according operation weight of the unit.

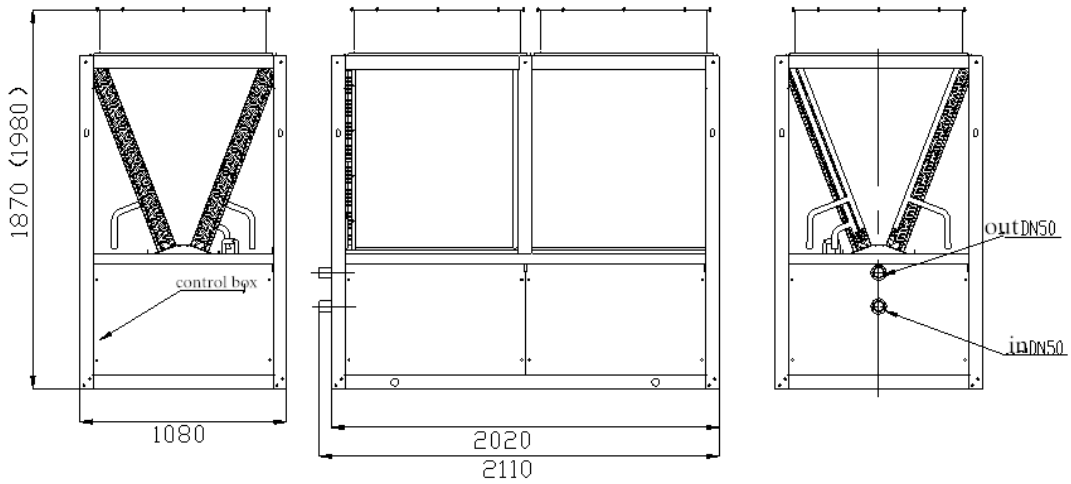
4. Use the M16 foot bolt fix the unit.

5. Reserve more than 1.5m space around the unit, which is better for the circulation and the maintenance of the equipment.

Modular Type

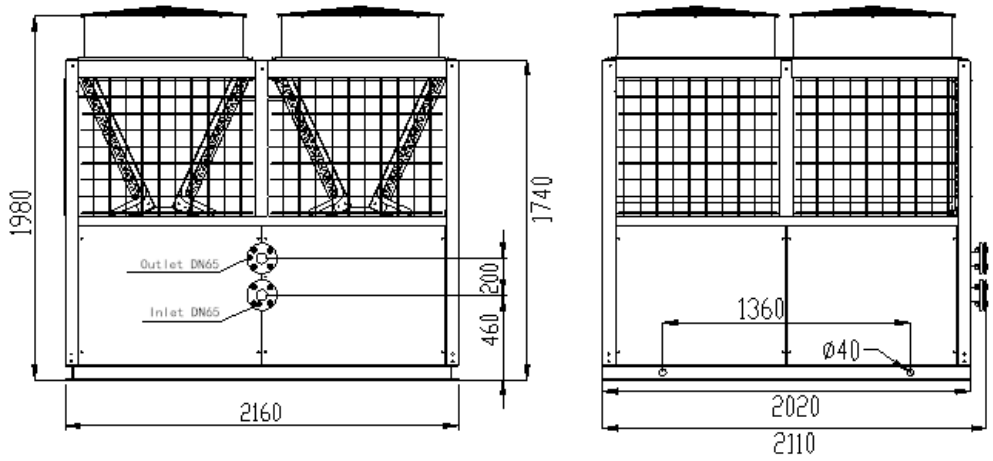
Unit dimension:mm

<1>60/68/90

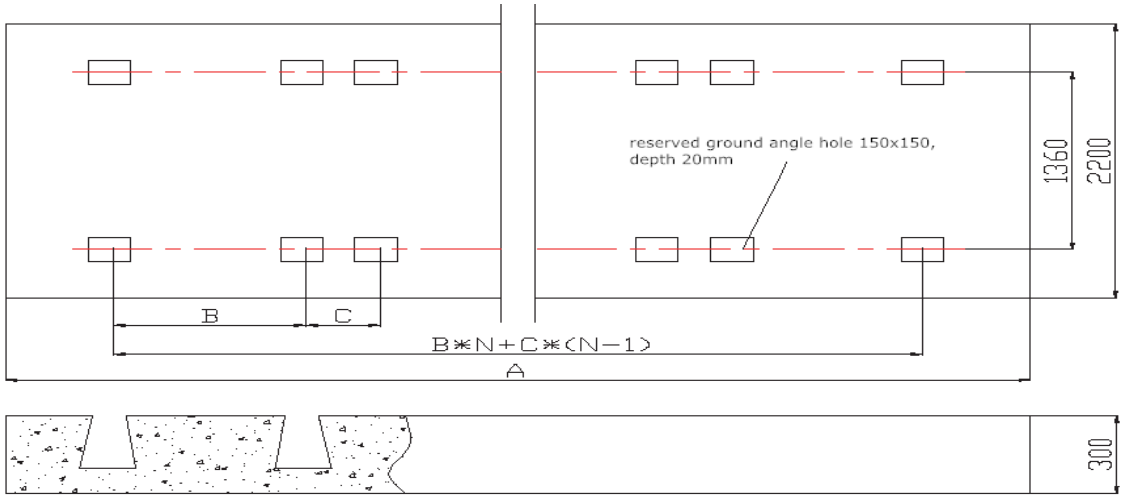


Height of 60/68 is 1870mm, height of 90 is 1980mm.

<2>136



Unit foundation:mm



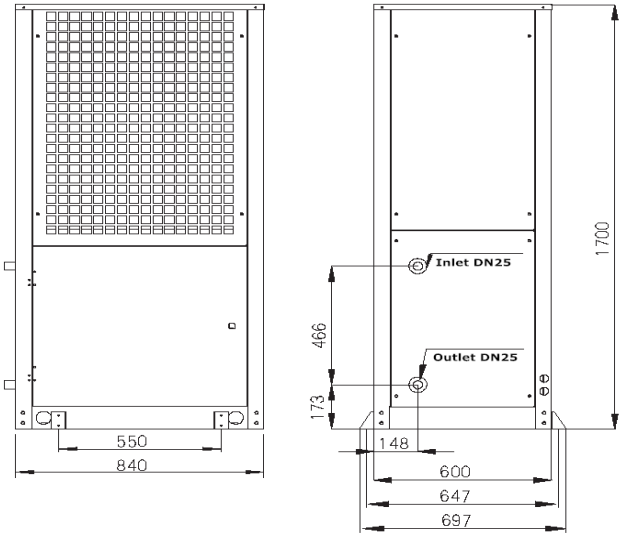
	60	68	90	136
A	1350	1350	1350	2400
B	1030	1030	1030	2130
C	/	/	/	/
N	1	1	1	1

Note:

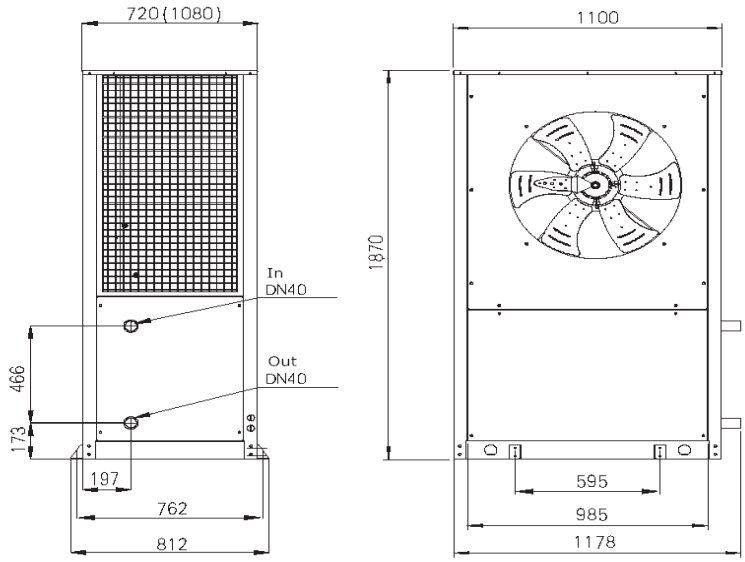
1. The foundation may (must be 150-300mm higher than ground level) be the concrete structure or the steel frame, and keep the foundation surface must be smooth.
2. Add a 20~30mm rubber shock pad between the unit and the foundation.
3. Design the foundation according operation weight of the unit.
4. Use the M16 foot bolt fix the unit.
5. Reserve more than 1.5m space around the unit, which is better for the circulation and the maintenance of the equipment.

Unit dimension:mm

<1> RLSFW011



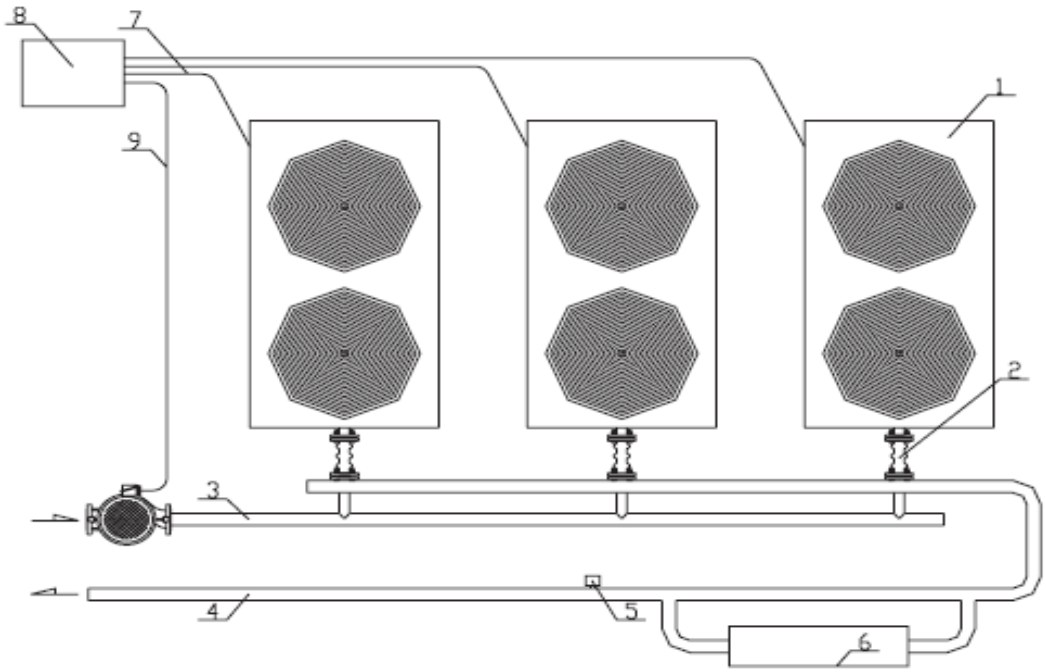
<2> RLSFW020/35/40/80



Width of 20/35/40 is 720mm, width of 80 is 1080mm

Units connection

1. Typical wiring and piping connection



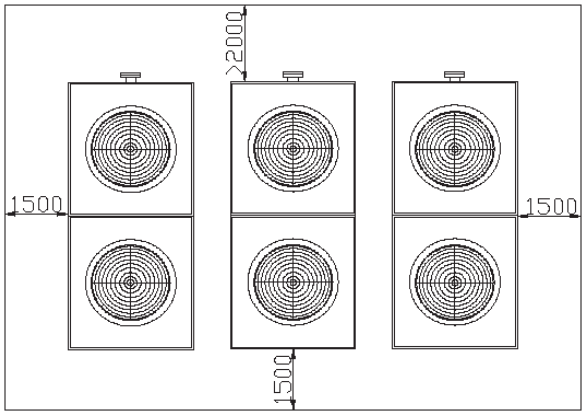
NO.	Name	Specification
1	chiller	RLSF068
2	flexible connection	DN50
3	inlet water pipe	DN80
4	outlet water pipe	DN80
5	water flow switch	LKB-01
6	auxiliary electric heater	depend on specific needs
7	unit cable	3×10+2×6, 3 groups
8	power distribution cabinet	depend on specific needs
9	water pump cable	depend on water pump power

2. Minimum conductor cross-section

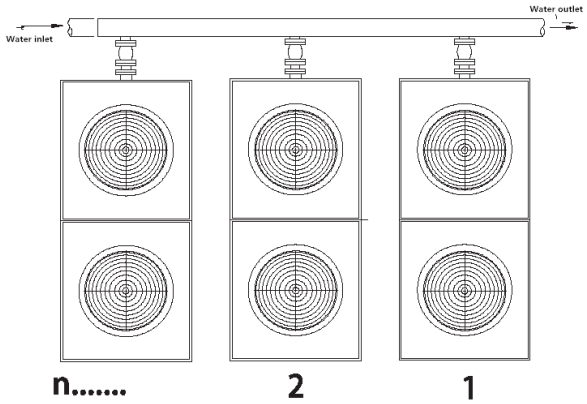
Model \ Module	1	2	3	4	5	6	7
60	3×10+2×6	3×25+2×10	3×50+2×16	3×70+2×25	3×120+2×50	3×150+2×70	3×185+2×95
68	3×10+2×6	3×25+2×10	3×50+2×16	3×70+2×25	3×120+2×50	3×150+2×70	3×185+2×95
90	3×16+2×10	3×50+2×25	3×95+2×50	3×150+2×70	3×185+2×95	3×240+2×120	3×300+2×150
136	3×25+2×16	3×70+2×35	3×150+2×70	3×240+2×120	3×300+2×150	3×400+2×185	3×500+2×240

***Conductor cross-section data above are for reference only, specific wiring should consult the wiring methods, encapsulation methods, wire insulation materials and related laws and regulations.**

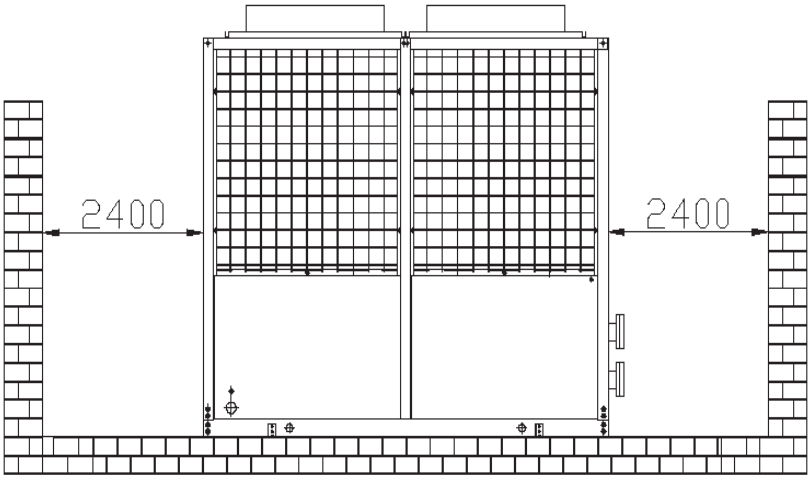
3. Installation instruction



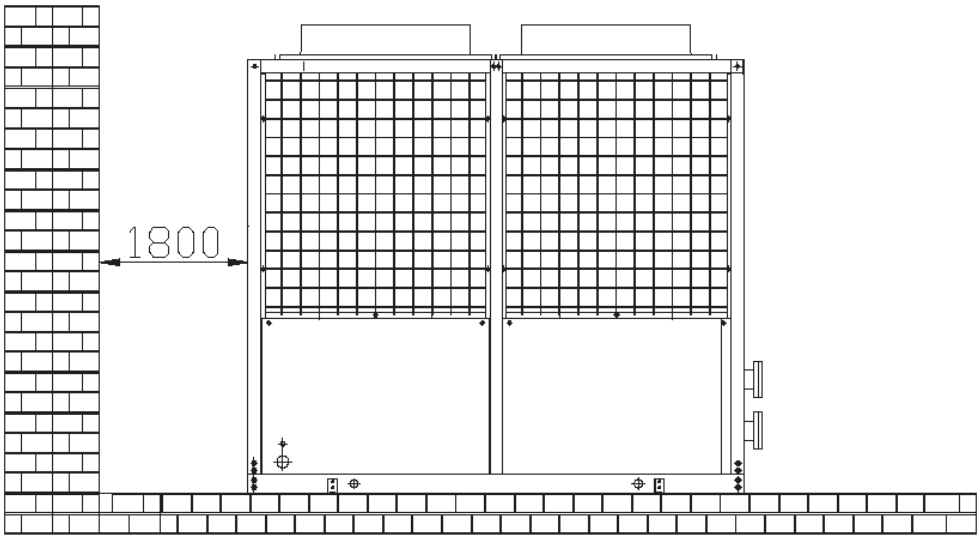
1)1.5m Space reservation for maintenance around the unit



2) Use flexible connection between unit and main pipe.



3) If there are wall around the unit, the height must be lower than the unit and the distance must be around 2~2.5m, to ensure good ventilation



4) If one side wall is higher than the unit, the distance must be more than 1800mm.

Capacity correction coefficient table

1.Cooling condition

outlet water (℃)	ambient temperature (℃)				
	25	30	35	40	45
5	1.07	1.00	0.94	0.84	0.81
6	1.10	1.03	0.97	0.87	0.83
7	1.14	1.07	1.00	0.91	0.86
8	1.17	1.10	1.03	0.94	0.88
9	1.20	1.13	1.06	0.98	0.91
10	1.23	1.16	1.09	1.01	0.93
11	1.27	1.19	1.12	1.04	0.96
12	1.31	1.23	1.16	1.07	0.99
13	1.34	1.26	1.17	1.09	1.01
14	1.37	1.29	1.20	1.12	1.03
15	1.41	1.32	1.23	1.14	1.06

2.Heating condition

outlet water (℃)	ambient temperature (℃)						
	15	10	7	5	0	-5	-10
30	1.23	1.10	1.30	0.99	0.89	0.81	0.73
35	1.21	1.09	1.02	0.87	0.87	0.79	0.7
40	1.20	1.08	1.01	0.86	0.86	0.77	0.67
45	1.19	1.07	1.00	0.84	0.84	0.75	0.65
50	1.17	1.05	0.98	0.83	0.83	0.74	0.64