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Details of specifications and equipment are also subject to change to suit local conditions and requirements and not all models are available in every market.



# DAIKIN Inverter Air Cooled Screw Chiller



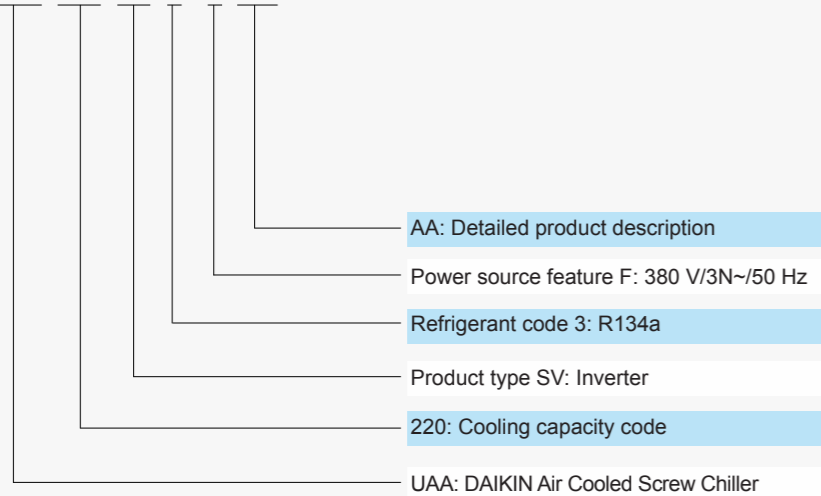


# Inverter Air Cooled Screw Chiller



## Unit Description

UAA 220 SV 3 - F AA



## Catalog

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Ultimate  
Frequency Inversion  
Leading Creative Technology



Adopting the most advanced inverter compressor and inverter driver in the industry, DAIKIN's world-leading inverter air cooled screw chiller unit strictly complies with the highest industry standard and ISO9001 quality management system and passes the test of nationally recognized laboratories in all operating conditions to guarantee high performance, high reliability and high security. The unit has been filled with refrigerant and lubricant before delivery. The integrated design of the electric control cabinet with the main unit facilitates user operation and maintenance in the field.

High-efficiency &  
Energy-saving  
Building Perfect Products



As the first professional air conditioning company designing and manufacturing large-scale air cooled chiller units in the world, DAIKIN has been committed to the improvement and innovation of air conditioning technologies and created many the first in the technology development history of air cooled chiller units. As people pay more attention to environmental protection and energy saving and require highly for the high-efficiency central air conditioning unit and reasonable matching scheme, as for the Chinese market, DAIKIN has first created the brand-new inverter air cooled screw chiller unit with higher efficiency to provide users with more reasonable and excellent air conditioning solutions.

Time-honored Brand  
Inheriting Excellent  
Quality



DAIKIN has been committed to research in air conditioning technologies for over a century. As a leading brand in the air cooled chiller industry, DAIKIN has perfectly integrated its deep accumulation in air cooled chiller technologies for over 40 years and its application experience in single-screw compressors for more than 30 years with the advanced inverter, energy saving and environmental protection technologies, to launch the inverter air cooled screw chiller unit featuring higher-efficiency & energy saving, precise control, stability & reliability, and low carbon & environmental protection.

Environmental  
Protection & Low Carbon  
Creating Technology-based Nature



As the first brand launching the R134a cold water unit in the world, DAIKIN has always advocated environmental protection technologies to practice the enterprise's social responsibilities with you. The inverter air cooled single-screw chiller unit adopts the R134a environment-friendly refrigerant which contains no chlorine, does no harm to the ozone layer, and is not forbidden in the latest Montreal Protocol. With excellent refrigerant features and lower power consumption indicators, this unit can bring more environment-friendly enjoyment to you.



High-efficiency & Energy-saving

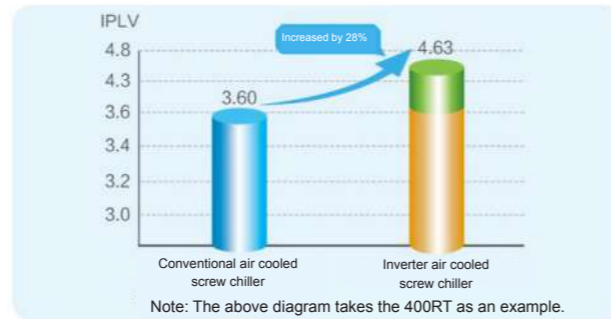
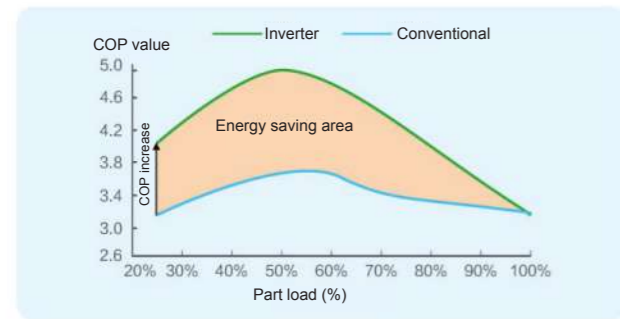
IPLV – Reflecting Energy Saving Performance of Air Conditioning Unit in a More Scientific Manner

The Integrated Part Load Value (IPLV) is calculated by the weighted factor of the unit operation time under specific workload based on the coefficient of performance (COP) in part load (100%, 75%, 50% or 25% load). In most cases, the central air conditioning system operates in part load and the IPLV just indicates the overall efficiency level when the unit works in part load. Therefore, the IPLV can reflect the energy saving performance of air conditioning unit in a more scientific manner.

$$IPLV = COP \text{ in } 100\% \text{ load} \times 2.3\% + COP \text{ in } 75\% \text{ load} \times 41.5\% + COP \text{ in } 50\% \text{ load} \times 46.1\% + COP \text{ in } 25\% \text{ load} \times 10.1\% \text{ (GB standard)}$$

High IPLV – Saving Running Cost

DAIKIN Inverter air cooled screw chiller unit adopts the latest inverter single-screw compressor and the most advanced inverter technology to achieve higher efficiency in part load and more precise control. In the operating conditions specified in national standards, the IPLV of the unit can reach 4.63(GB), 28% higher than the conventional air cooled screw unit. Thus the unit operates in a more energy saving manner.



Energy Saving Calculation

Project overview: An office building in East China has a construction area of 11,000 m<sup>2</sup>, in which the air conditioning area is 9,300 m<sup>2</sup>. The cooling load is 1,395 kW. The unit works for cooling for 270 days, running for ten hours every day.

Optional solution:

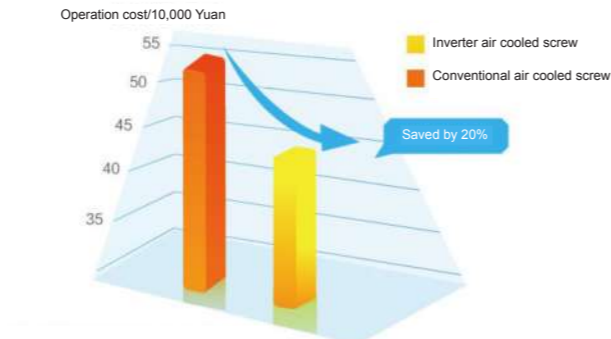
- ① Two 200RT conventional air cooled screw chiller units

Energy saving analysis:

Proportion of Air Conditioning Load Time Percentage (%)	Operation Status of Load	100%	75%	50%	25%
Operation Time of Unit	Operation Time of Unit	2.3	41.5	46.1	10.1
Power Consumption Time	Power Consumption Time for Cooling/h	63	1121	1245	273
Power Consumption of Air Cooled Screw Chiller	Conventional Unit (Cooling)/kW·h	27,113	347,281	235,008	30,126
	Inverter Unit (Cooling)/kW·h	26,989	28,4497	178,108	23,538

- ② Two 200RT inverter air cooled screw chiller units

Annual operation cost:



Note: The operating condition and weighted calculation method of the heating IPLV are not defined in the national standards, so the cooling IPLV is used for calculation.

**Energy Saving Efficiency** With the excellent COP in part load, the inverter air cooled screw chiller unit can save at least 20% power consumption of the main unit compared with the conventional air cooled screw chiller unit all year round.

**Solution Summary** With the outstanding part load performance, the inverter air cooled screw unit particularly applies to the places where the annual load fluctuates greatly, the part load runs for a long time, and the air conditioning load changes a lot due to obvious time/area division and large people fluctuation. For example, hotels, hospitals, office buildings and public buildings.

High IPLV Design Technology

Inverter Single-screw Compressor

The unit adopts the inverter single-screw compressor and controls the inverter to implement stepless speed regulation with the microprocessor, thus realizing 12.5% to 100% continuous output.



Electronic Expansion Valve

The unit adopts the most advanced electronic expansion valve to precisely control the flow of refrigerant entering the evaporator. Thus the unit applies to multiple operating conditions and provides multiple control functions to guarantee its efficiency.



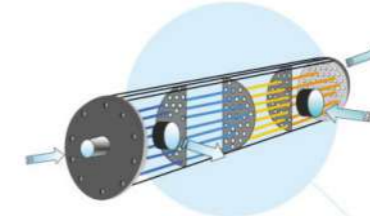
Economizer

The unit adopts the circular plate economizer to improve its degree of supercooling, thus greatly enhancing its cooling capability and energy efficiency.



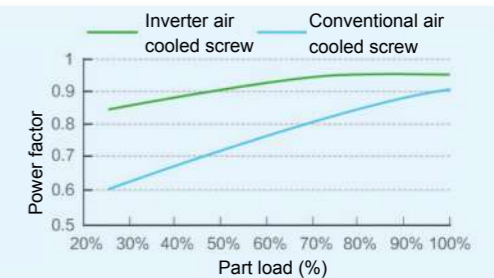
Pure Counterflow Shell and Tube Evaporator

The unit adopts the pure counterflow shell and tube evaporator with the latest energy saving & environmental protection concept to perform reverse heat exchange between the refrigerant and refrigerating medium, thus implementing more adequate evaporation at ultrahigh temperature and higher heat exchange efficiency.



Leading High Power Factor

The power factor of the conventional air cooled screw unit may be significantly reduced as the load decreases, while the advanced design of inverter air cooled screw makes the unit always operate at a high power factor that may reach 0.95. The high power factor can decrease the deadweight loss of electricity during transmission and improve the utilization of electricity, thus reducing electricity costs of users.



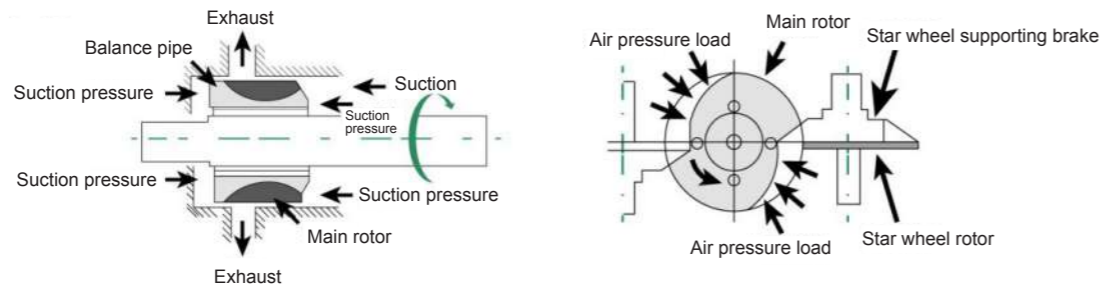


Reliable Operation

Advanced Single-screw Technology

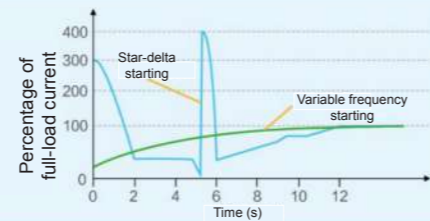
As a leader in the single-screw compressor technology, DAIKIN provides a semi-hermetic single-screw compressor featuring high efficiency & energy saving, silence, balanced forcing, few moving parts, and long service life. Moving parts of the inverter single-screw compressor only include a screw rotor and two star wheels, which further improves security.

Two star wheels are symmetrically placed around the screw rotor, offsetting axial propulsive forces of the rotor with its radial propulsive forces. DAIKIN's particular balanced forcing technology makes bearings usable for more than 100,000 hours.



Ultralow Startup Current

The unit adopts the advanced inverter starting mode which imposes no impact on the grid with ultralow startup current, thus guaranteeing security and reliability of the grid. As the startup current of the unit is always lower than its maximum nominal running current, users can reduce electric power investment and standby power costs.



Quick Startup upon Power Failure

The unit can restart the compressor within 30 seconds after power recovery and restore the running status before power failure in the shortest time.



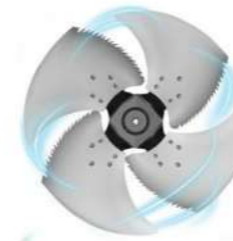
Comprehensive Safety Protection

The unit provides the multi-safety protection function to comprehensively monitor the unit and system, preventing the unit from being damaged in the case of environment or system exceptions.



Silence & Comfort

Aerodynamic Low-noise Fan



The air side heat exchanger adopts the brand-new aerodynamic spiral low-noise fan that is directly driven by motors, generating noise over 3dB(A) lower than the conventional spiral fan.

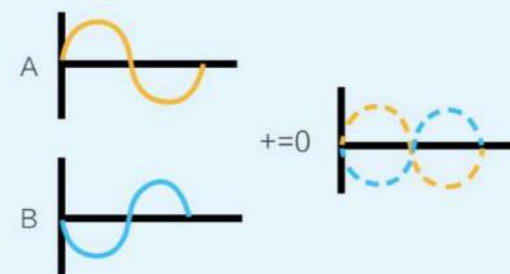
Compressor Silence (Standard Soundproof Box)

The unit adopts the advanced inverter single-screw compressor. During compression, the metals and nonmetals gear into each other to eliminate high frequency noise. Each compressor is equipped with a standard soundproof box to further decrease operation noise by means of high-efficiency sound-absorbing materials.



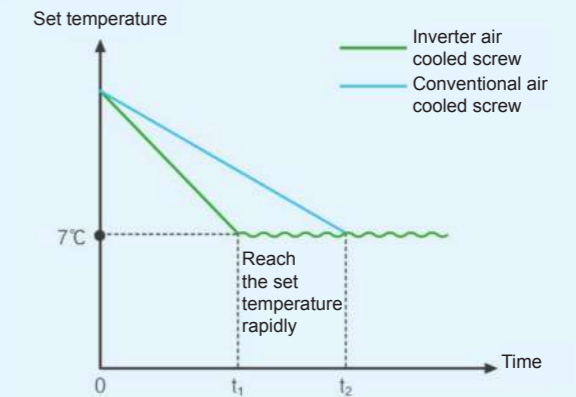
Dual Vibration Reduction

The unit is designed with compact structure. The compressor is equipped with a standard rubber bumper to bear the weight of the entire unit in a balanced manner to reduce vibration transfer. The unit is equipped with a standard spring bumper upon delivery to implement dual vibration reduction, which further decreases vibration transfer in buildings.



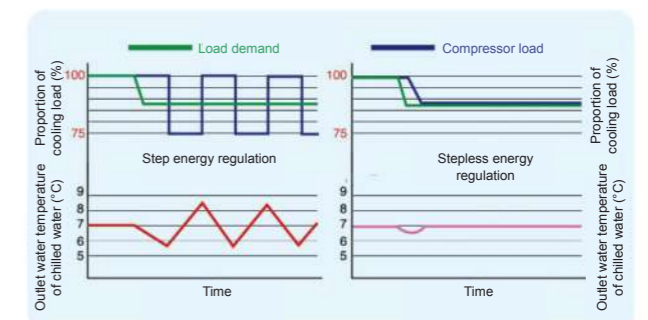
Rapid Cooling

The unit checks the user's load demand upon startup, and the compressor loads rapidly and outputs with large capacity to reach the set temperature for the outlet water in a short time, thus meeting the user's cooling demand.



Precise Control and Output on Demand

The unit adopts the advanced Micro Tech III control platform to monitor the unit operating status in real time through the high-precision sensor. Based on the load demand of building system, the inverter screw unit can rapidly respond and continuously, stably output energy on demand to guarantee stable outlet water temperature, completely matching load and more comfortable user experience.





Intelligent Control

Built-in Intelligent Controller

The unit adopts DAIKIN's new generation Micro Tech III controller which integrates DAIKIN's chiller application and experience technologies for over 40 years and provides programmable software to implement a combination of compressor and fan with the highest energy efficiency ratio. Through the LCD interface of the built-in wired controller, users can monitor the unit operating status in a comprehensive manner more conveniently.

The unit adopts the humanized intelligent control system to automatically and dynamically monitor/control the unit operating status and display the fault causes, thus facilitating unit maintenance. The controller provides such functions as three-level password protection, parameter setting, parameter display, and agenda management.



- Control type: PLC.
- Operating language: Chinese or English.
- Interface display: LCD.

External Wired Controller (Optional)

The external wired controller can be led to the control room by connecting with the main controller. It has the same functions as the internal wired controller of the control cabinet, thus facilitating the user's remote control. The external wired controller is connected with a wire up to 700 meters long.



External wired controller (optional)

Main Functions

- Automatic loading/unloading as user load changes.
- Alarm display for general faults.
- Precise water temperature control  $\pm 0.5^{\circ}\text{C}$ .
- PID control for output load.
- Balanced operation time for each compressor.
- Control for compressor load.
- Three-level password protection.
- Stepless load regulation.

Query for Unit Operating Status

- Unit status.
- Inlet/outlet water temperature.
- System status.
- Suction/exhaust pressure.
- Suction/exhaust temperature and superheat.
- Opening of electronic expansion valve.
- Oil pressure.
- Ambient temperature.
- Up to 50 historical faults.

Network Control (Optional)

The controller can be selectively configured with such communication protocol interfaces as Modbus, LonWorks, and BACnet to easily connect the unit to the central control system or building automation system (BAS), thus conveniently implementing intelligent management, avoiding inevitable energy waste, and saving operation costs of air conditioning system.

CSM ECO Group Control System

CSM ECO Group Control System for Cold Water Room

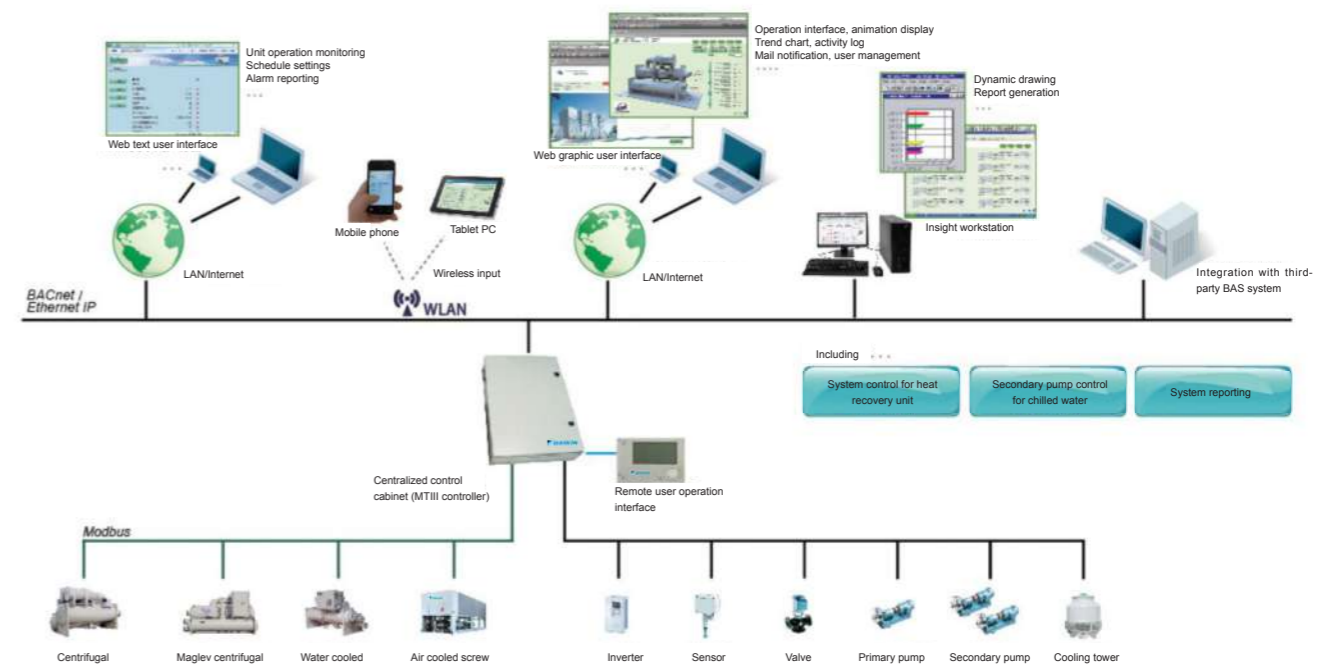
Based on different types of air conditioning units and water systems, DAIKIN's CSM ECO group control system can provide appropriate control solutions. Typical control solutions include sequentially enabling/disabling and increasing/decreasing the water pump, electric switching valve, bypass regulating valve, and multiple water/air cooled chillers.

- Comprehensive optimization for the total system energy consumption
- Visual and operable central monitoring platform
- Precise "unmanned equipment room"
- Constant maintenance for the unit and accessories
- Decreased negative impact on the environment

Perfect and Optional Preset Control Logic System

The CSM ECO™ group control system provides customers with a series of perfect control strategies. Based on different actual demands, customers can select appropriate strategies to obtain the most efficient control solution to reduce downtime of the unit. In addition, the fault diagnosis function can prolong the service life of the unit and guarantee user requirements for comfortability.

- Unit level quantity and sequential enabling/disabling control
- Ambient temperature locking
- Load side flow control
- Outlet water temperature resetting for chilled water
- Thermostatic control based on the wet bulb temperature
- ...

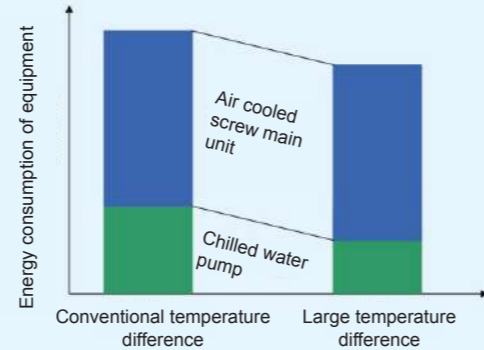




## System Application\*

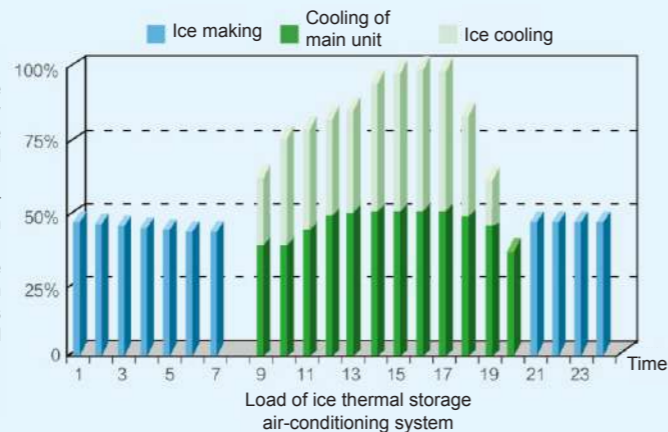
### Large Temperature Difference & Small Flow ( $\Delta t \leq 10^\circ\text{C}$ )

DAIKIN can provide an air conditioning water system solution with large temperature difference and small flow. By increasing the temperature difference between inlet water and outlet water, this solution greatly decreases the pump flow and head to achieve the objective of decreasing pump power and total system energy consumption. Deduction of water flow can accordingly decrease the pump dimension, valve dimension and pipe diameter to save investment. When the system load decreases, DAIKIN air cooled screw unit can better keep the ultrahigh part load performance at large temperature difference to dynamically match and output on demand, thus greatly decreasing operation costs of the system.



### Ice Storage

The unit can provide the ice storage option. In the areas where the time-of-use electricity price differs a lot, the unit can make ice by using the valley load electricity at nighttime and melt the stored ice in daytime to release the cooling capacity to meet the cooling load demand at peak electricity price hours, thus decreasing operation costs of the air condition unit at peak hours. The lowest outlet water temperature of DAIKIN air cooled screw unit for cooling can reach  $-8^\circ\text{C}$  and the main unit can implement settings for dual operating conditions. At nighttime the unit makes ice, and in daytime the unit works for cooling to supplement the load demand based on insufficient ice melting. The main unit with dual operating conditions can significantly decrease the first investment in the ice thermal storage system.



Note: \*For details about system application, please contact the local sales branch of DAIKIN.

## Options

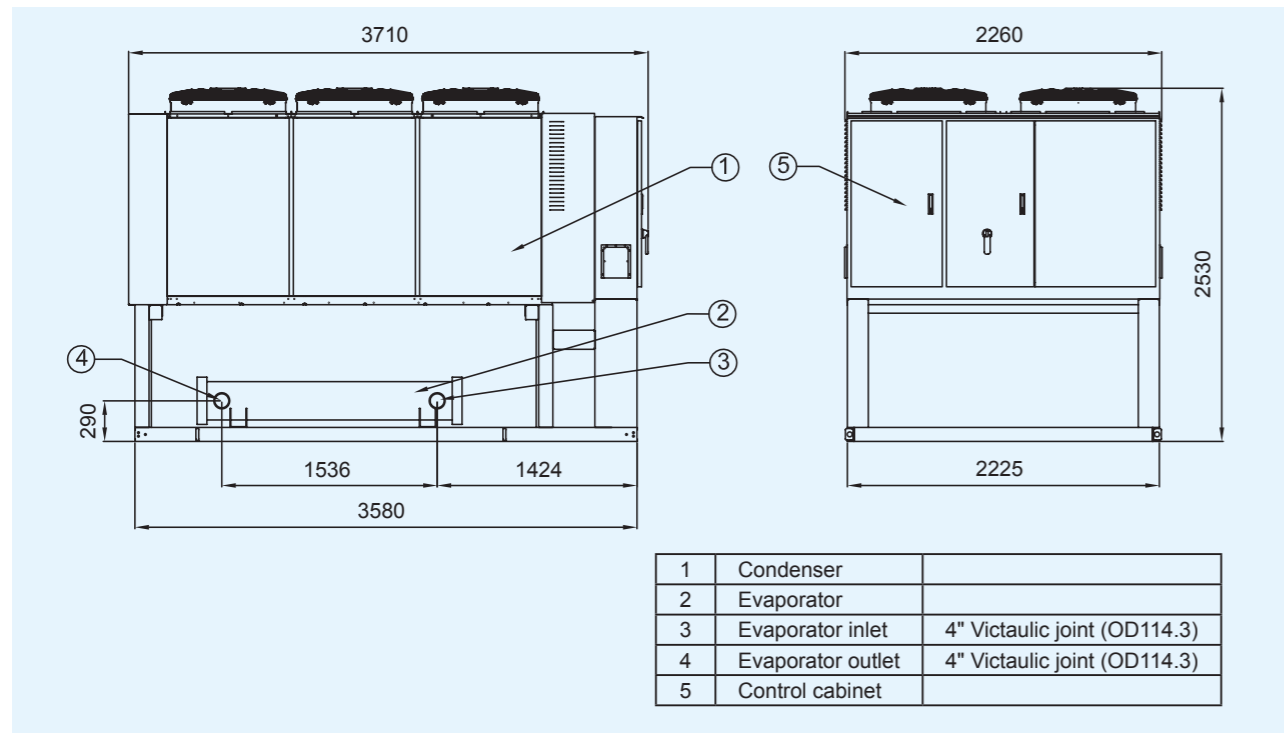
- Wave filter
- Anti-corrosion aluminum
- External wired controller
- Voltmeter
- Protective net of condenser
- Built-in water pump of unit
- Ammeter
- Protective net of unit body
- Self-controlled interface of building

## Specifications

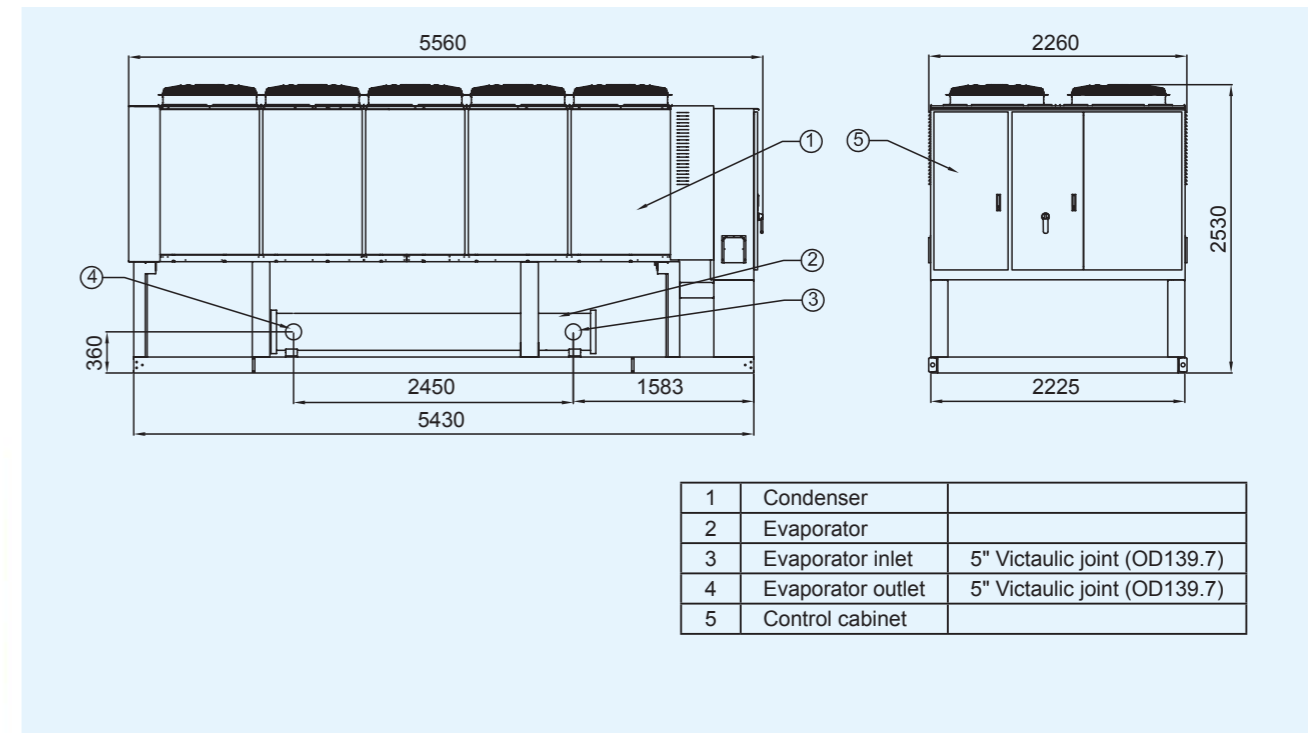
Model UAA	SV3	105	125	150	204	220	245	291	348	380	400	424	450	
Nominal Cooling Capacity	kW	341	469	571	694	818	938	1040	1142	1265	1388	1512	1636	
	$\times 10^4$ kcal/h	29	40	49	60	71	81	90	98	109	120	130	141	
Compressor Input Power (Cooling)	kW	97.6	133.4	160.9	193.3	233.3	266.8	294.3	321.8	354.4	386.6	426.2	466.6	
Power Source	380V/3N~/50HZ													
Energy Regulation Range	25%~100%						12.5%~100%							
Refrigerant	R134a													
Number of Refrigerant Channels	1						2							
Throttle Mode	EXV													
Compressor	Type	Semi-hermetic inverter single-screw compressor												
	Startup Mode	Variable frequency starting												
	Cooling Mode	Liquid Injection Cooling												
Air Side Heat Exchanger	Type	Crossed Fin and tube heat exchanger												
	Type	High-efficiency spiral axial fan												
Fan	Qty.	n	6	8	10	12	14	16	18	20	22	24	26	28
	Total Air Flow Rate	$\times 10^4$ m <sup>3</sup> /h	10.8	14.4	18.0	21.6	25.2	28.8	32.4	36.0	39.6	43.2	46.8	50.4
	Total Power	kW	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	44.0	48.0	52.0	56.0
Water Side Heat Exchanger	Type	Shell and tube heat exchanger												
	Water Flow for Cooling	m <sup>3</sup> /h	59	81	98	119	141	161	179	98/98*	98/119	119/119	119/141	141/141
	Water Resistance	kPa	56	79	67	75	64	76	75	67/67	67/75	75/75	75/64	64/64
	Pipe Diameter	inch	4		5		6			5/5	5/6	6/6	6/6	6/6
Water Side Working Pressure	MPa	1.0												
Packing Dimension	Length	mm	3710	4610	5560	6460	7360	8850	9750	11540	12440	13340	14240	15140
	Width	mm	2260											
	Height	mm	2530											
Weight	Transport Weight	kg	3000	3830	4860	5370	6050	7530	8410	9720	10230	10740	11420	12100
	Operating Weight	kg	3100	3930	5030	5610	6290	7810	8710	10060	10640	11220	11900	12580
Standard Accessories	Spring shock absorber, water flow switch													

Note: ■ Values separated by "/" in the cell marked with "\*" are respectively parameters of the main unit and auxiliary unit. The same for other similar cells.  
 ■ Operating conditions of nominal cooling capacity: The outlet water temperature of chilled water is  $7^\circ\text{C}$ , the water flow rate is  $0.172 \text{ m}^3/(\text{h}\cdot\text{kW})$ , and the ambient temperature is  $35^\circ\text{C}$  (dry bulb temperature).  
 ■ The UAA348-450SV3 adopts dual-point wiring for power source. Besides the above standard accessories, temperature sensors, communication cables and connectors are also included.

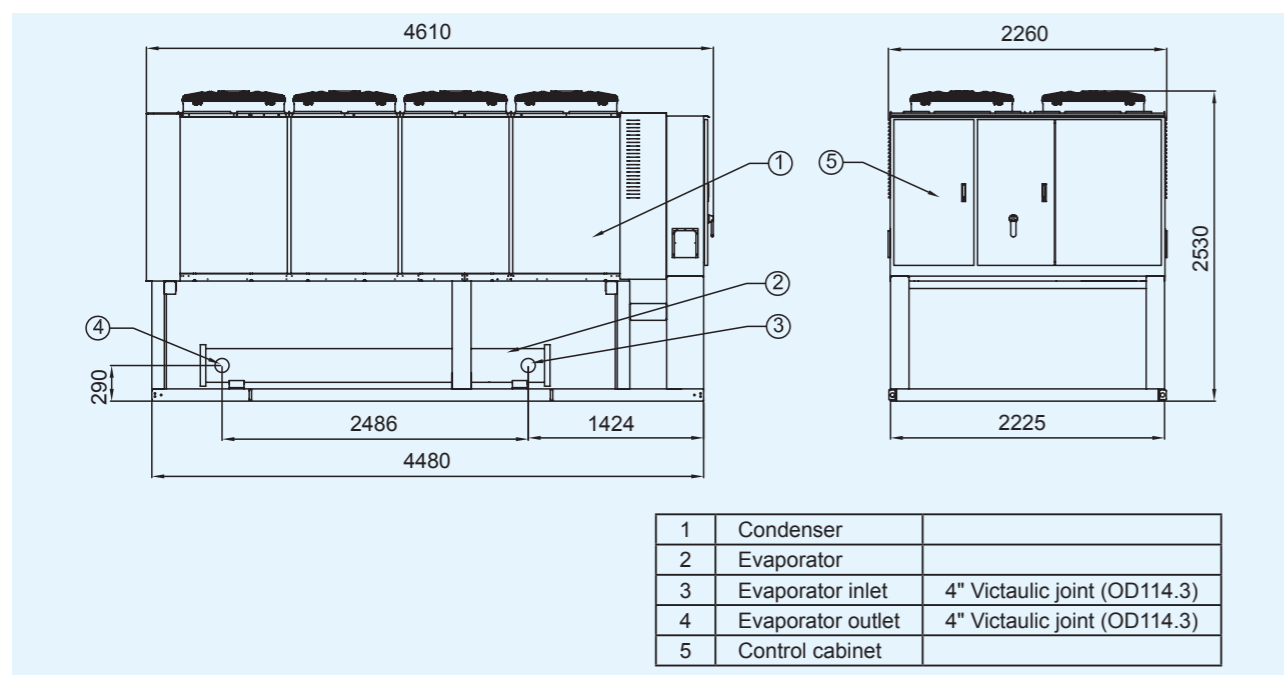
UAA105SV3



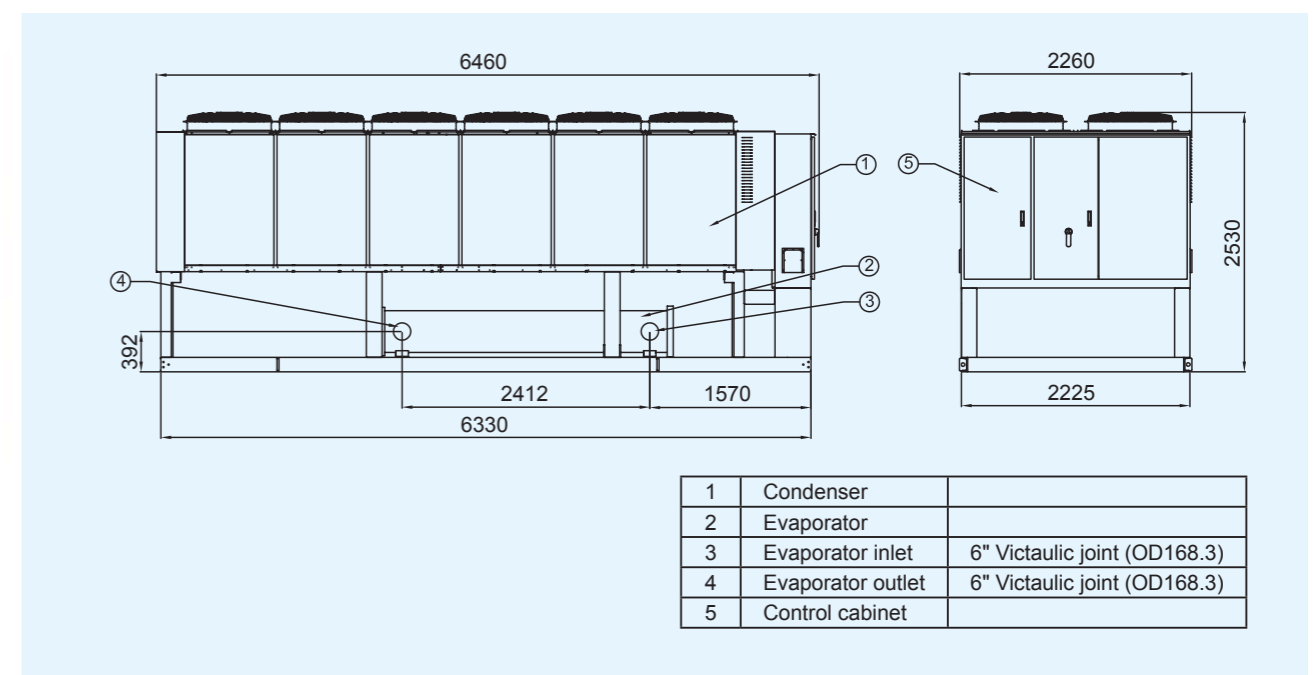
UAA150SV3



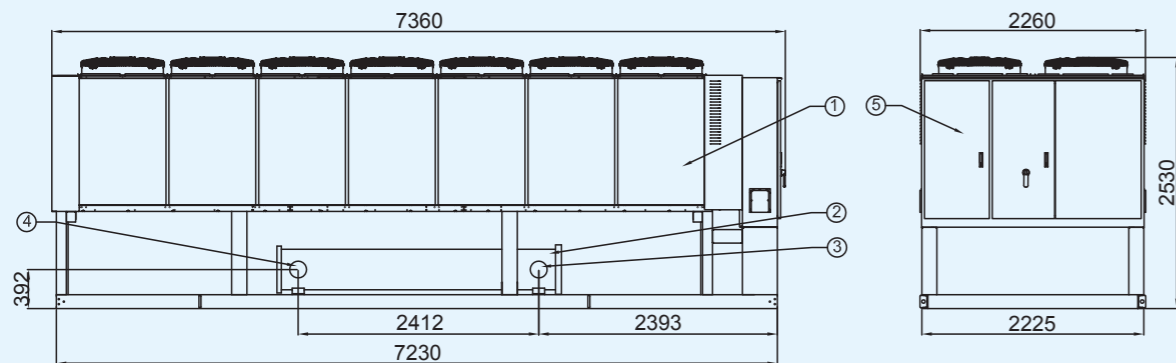
UAA125SV3



UAA204SV3

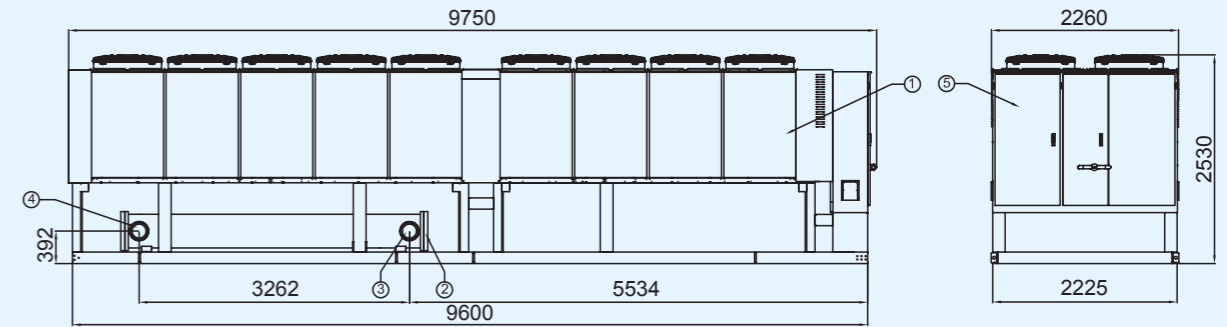


UAA220SV3



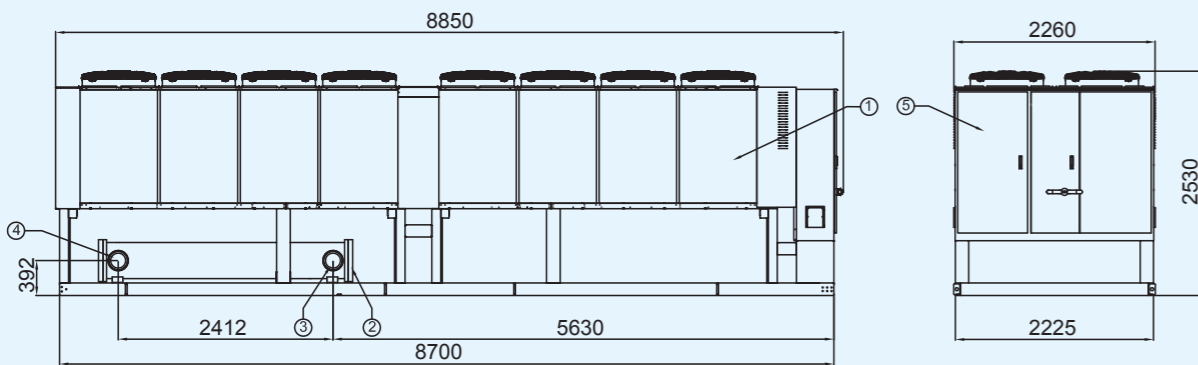
1	Condenser	
2	Evaporator	
3	Evaporator inlet	6" Victaulic joint (OD168.3)
4	Evaporator outlet	6" Victaulic joint (OD168.3)
5	Control cabinet	

UAA291SV3



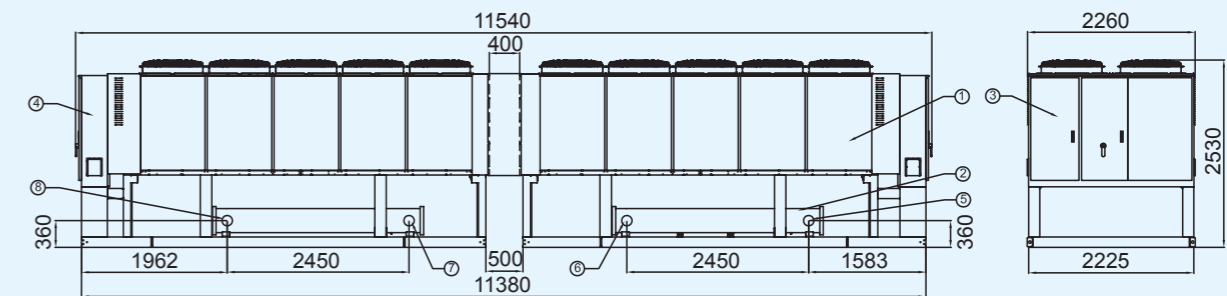
1	Condenser	
2	Evaporator	
3	Evaporator inlet	6" Victaulic joint (OD168.3)
4	Evaporator outlet	6" Victaulic joint (OD168.3)
5	Control cabinet	

UAA245SV3



1	Condenser	
2	Evaporator	
3	Evaporator inlet	6" Victaulic joint (OD168.3)
4	Evaporator outlet	6" Victaulic joint (OD168.3)
5	Control cabinet	

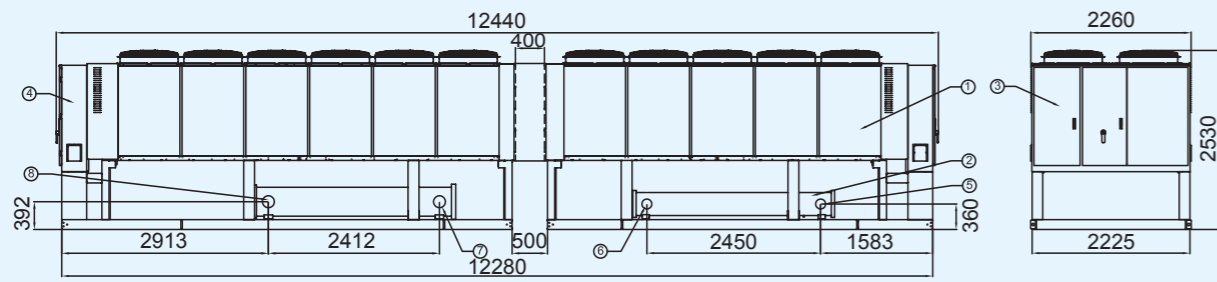
UAA348SV3



1	Condenser	
2	Evaporator	
3	Master unit control cabinet	
4	Auxiliary unit control cabinet	
5	Master unit evaporator inlet	5" Victaulic joint (OD139.7)
6	Master unit evaporator outlet	5" Victaulic joint (OD139.7)
7	Auxiliary unit Evaporator inlet	5" Victaulic joint (OD139.7)
8	Auxiliary unit Evaporator outlet	5" Victaulic joint (OD139.7)

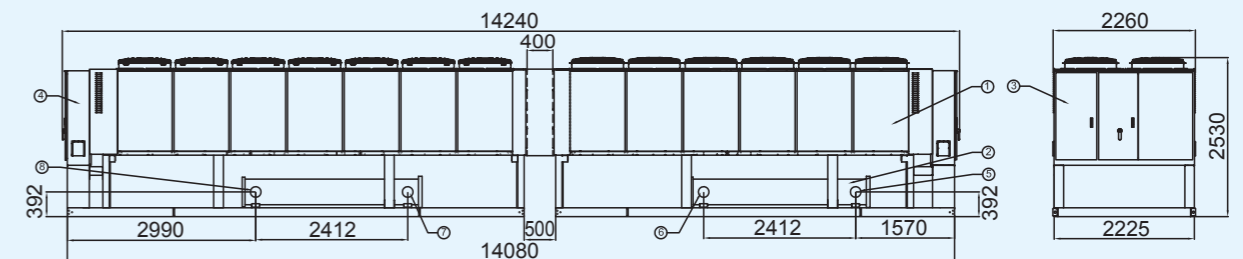


UAA380SV3



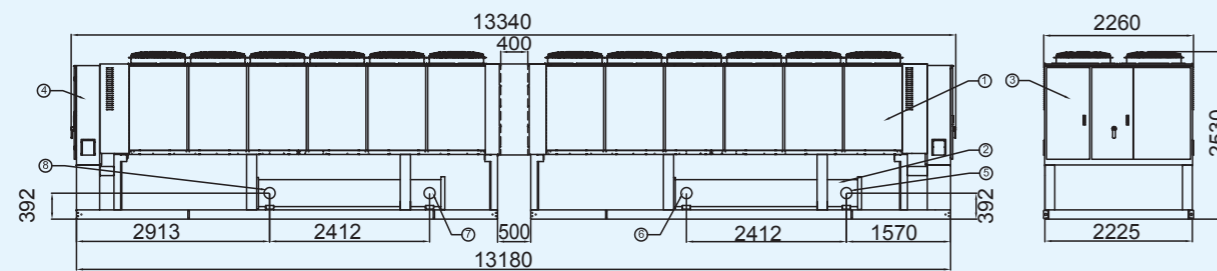
1	Condenser	
2	Evaporator	
3	Master unit control cabinet	
4	Auxiliary unit control cabinet	
5	Master unit evaporator inlet	5" Victaulic joint (OD139.7)
6	Master unit evaporator outlet	5" Victaulic joint (OD139.7)
7	Auxiliary unit Evaporator inlet	6" Victaulic joint (OD168.3)
8	Auxiliary unit Evaporator outlet	6" Victaulic joint (OD168.3)

UAA424SV3



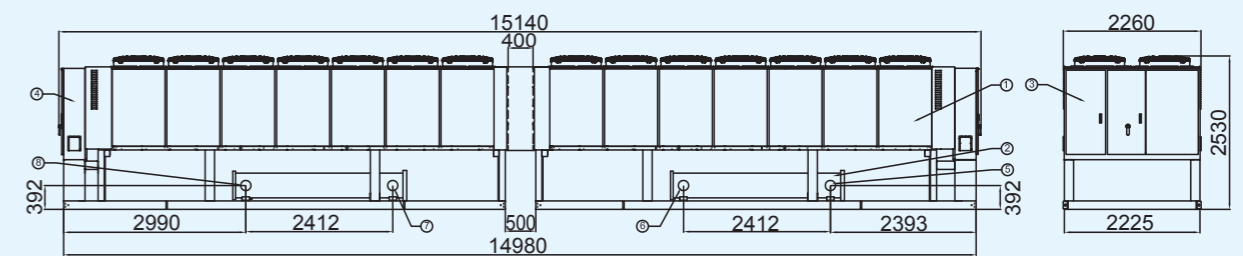
1	Condenser	
2	Evaporator	
3	Master unit control cabinet	
4	Auxiliary unit control cabinet	
5	Master unit evaporator inlet	6" Victaulic joint (OD168.3)
6	Master unit evaporator outlet	6" Victaulic joint (OD168.3)
7	Auxiliary unit Evaporator inlet	6" Victaulic joint (OD168.3)
8	Auxiliary unit Evaporator outlet	6" Victaulic joint (OD168.3)

UAA400SV3



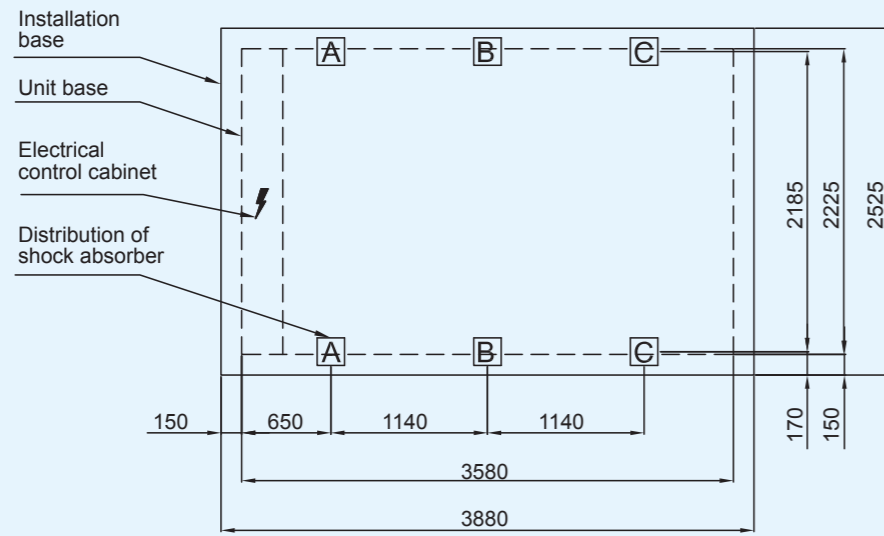
1	Condenser	
2	Evaporator	
3	Master unit control cabinet	
4	Auxiliary unit control cabinet	
5	Master unit evaporator inlet	6" Victaulic joint (OD168.3)
6	Master unit evaporator outlet	6" Victaulic joint (OD168.3)
7	Auxiliary unit Evaporator inlet	6" Victaulic joint (OD168.3)
8	Auxiliary unit Evaporator outlet	6" Victaulic joint (OD168.3)

UAA450SV3



1	Condenser	
2	Evaporator	
3	Master unit control cabinet	
4	Auxiliary unit control cabinet	
5	Master unit evaporator inlet	6" Victaulic joint (OD168.3)
6	Master unit evaporator outlet	6" Victaulic joint (OD168.3)
7	Auxiliary unit Evaporator inlet	6" Victaulic joint (OD168.3)
8	Auxiliary unit Evaporator outlet	6" Victaulic joint (OD168.3)

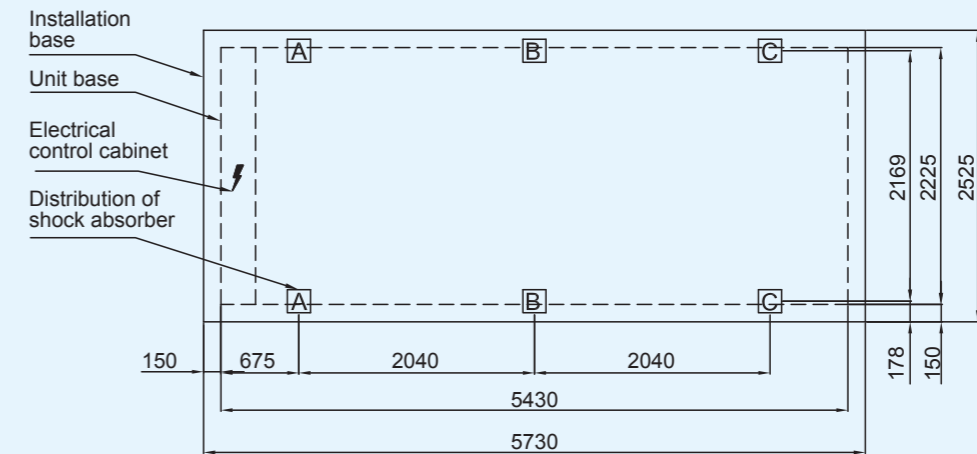
UAA105SV3



Model	Load of spring shock absorber (kg)		
	A	B	C
UAA105SV3	517	517	517

Unit: mm

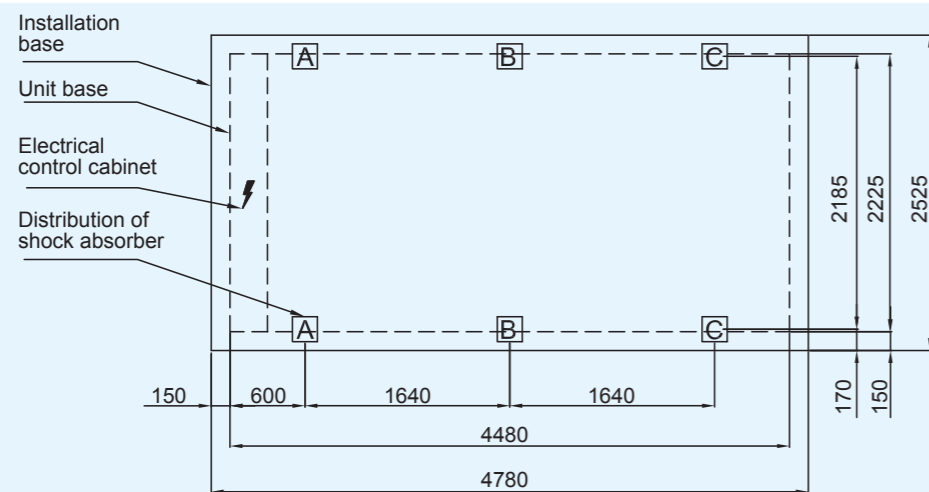
UAA150SV3



Model	Load of spring shock absorber (kg)		
	A	B	C
UAA150SV3	838	838	838

Unit: mm

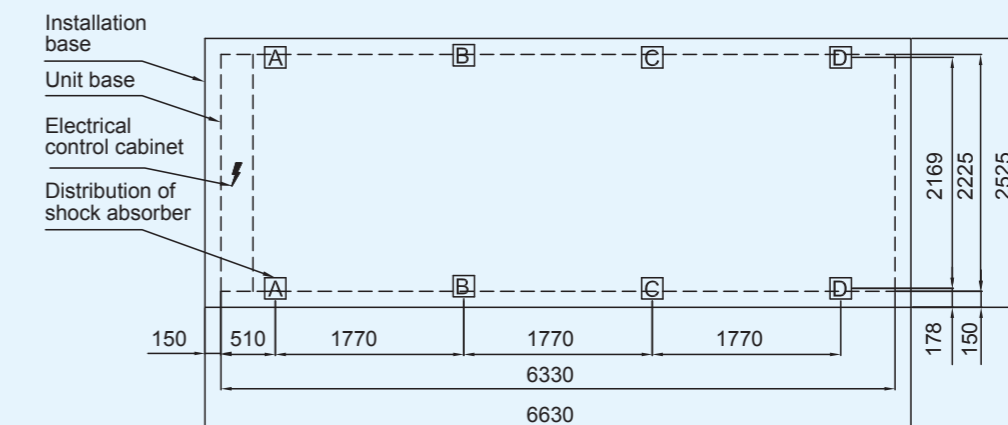
UAA125SV3



Model	Load of spring shock absorber (kg)		
	A	B	C
UAA125SV3	655	655	655

Unit: mm

UAA204SV3



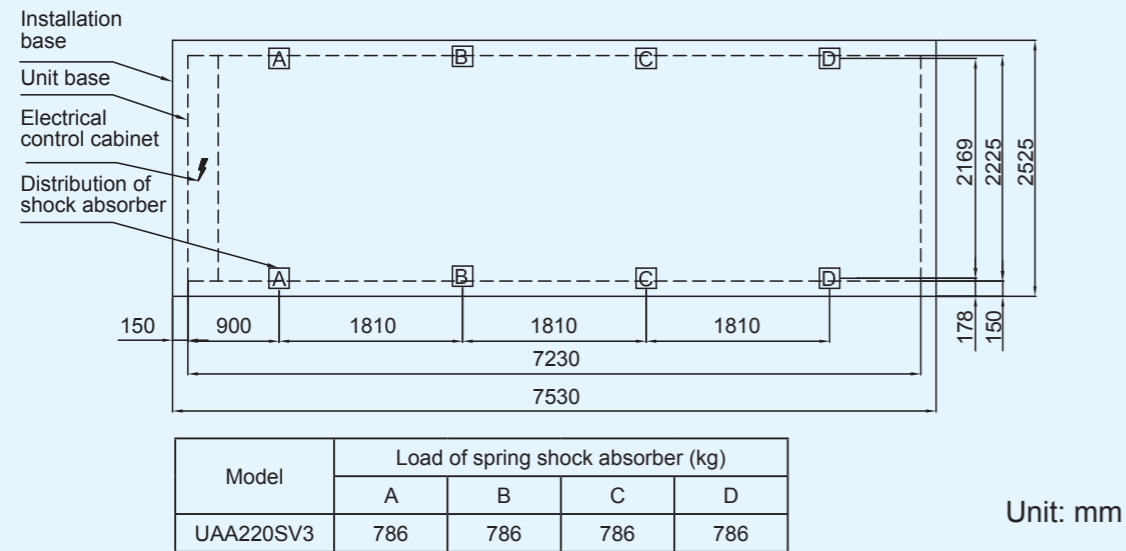
Model	Load of spring shock absorber (kg)			
	A	B	C	D
UAA204SV3	701	701	701	701

Unit: mm

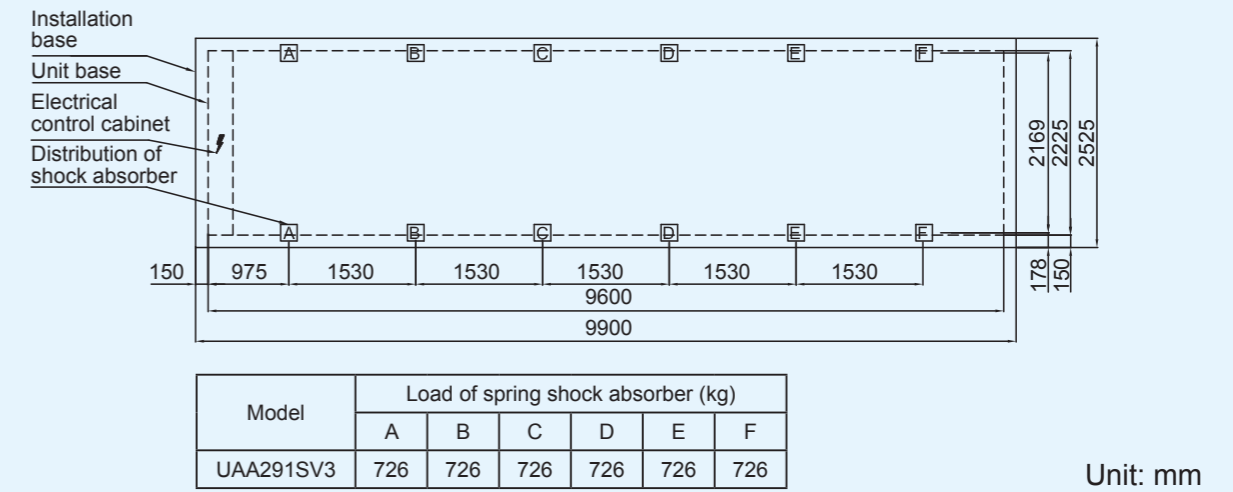


## Base Diagrams

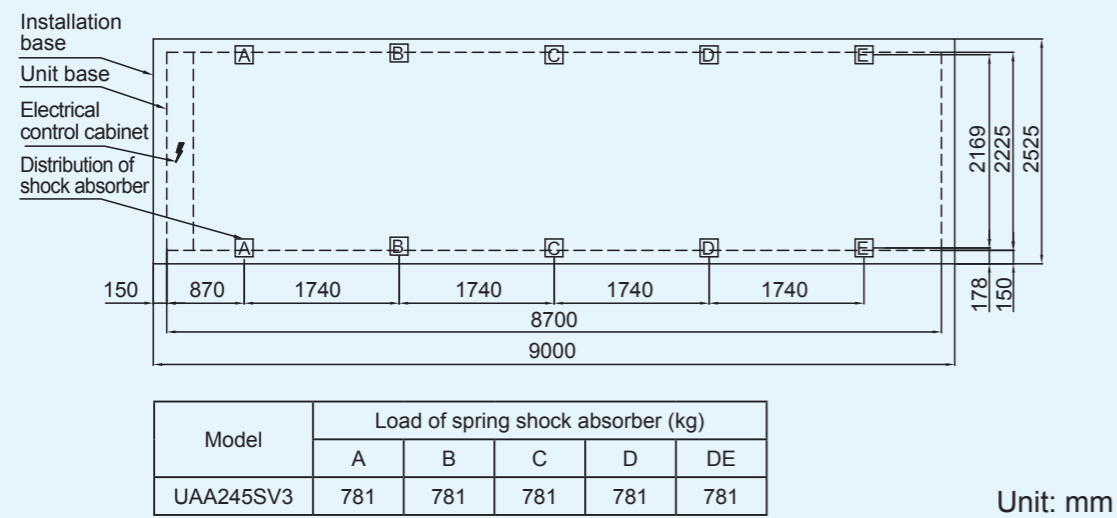
### UAA220SV3



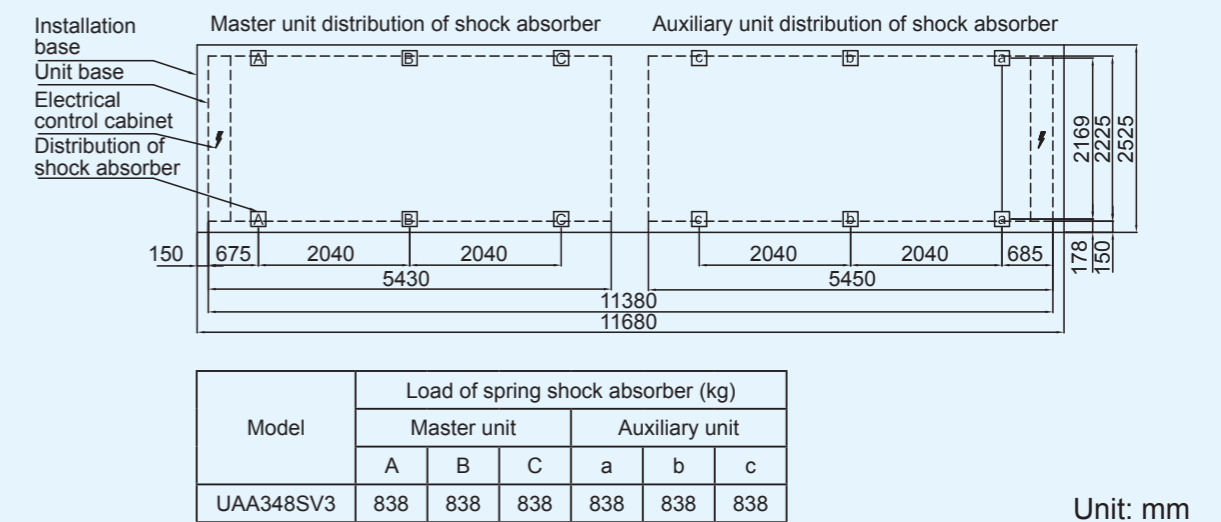
### UAA291SV3



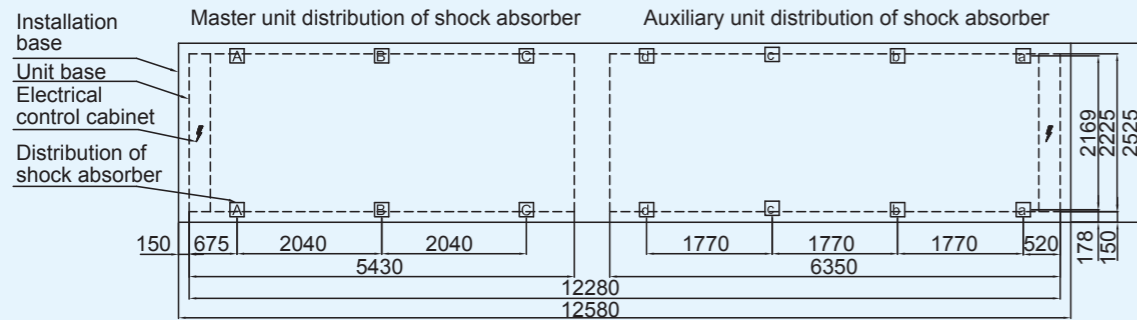
### UAA245SV3



### UAA348SV3



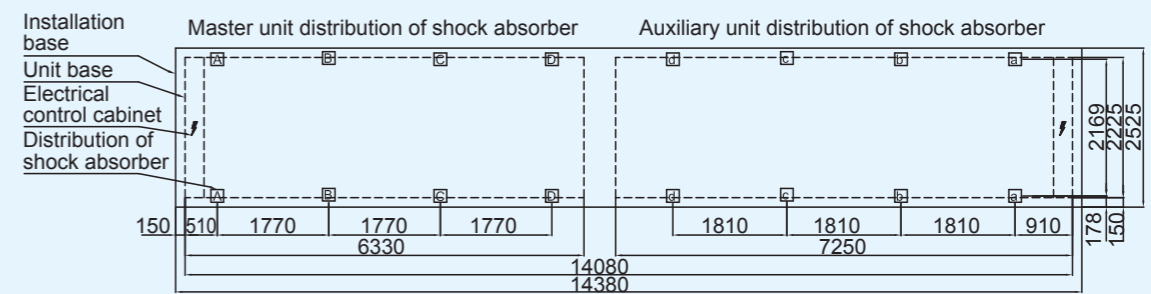
UAA380SV3



Model	Load of spring shock absorber (kg)							
	Master unit				Auxiliary unit			
	A	B	C	a	b	c	d	
UAA380SV3	838	838	838	701	701	701	701	

Unit: mm

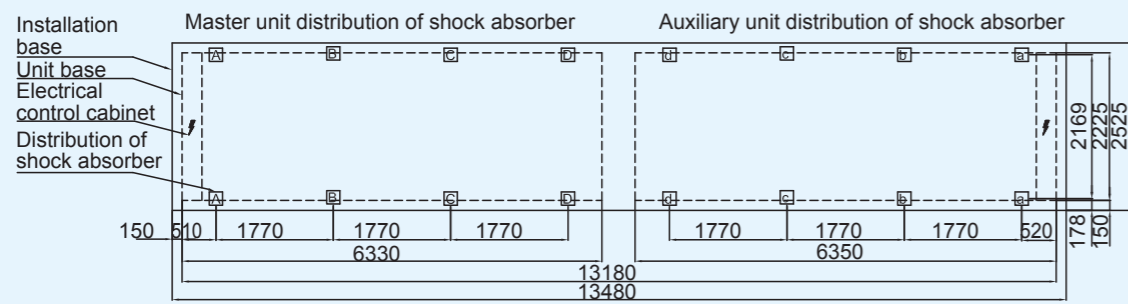
UAA424SV3



Model	Load of spring shock absorber (kg)							
	Master unit				Auxiliary unit			
	A	B	C	D	a	b	c	d
UAA424SV3	701	701	701	701	786	786	786	786

Unit: mm

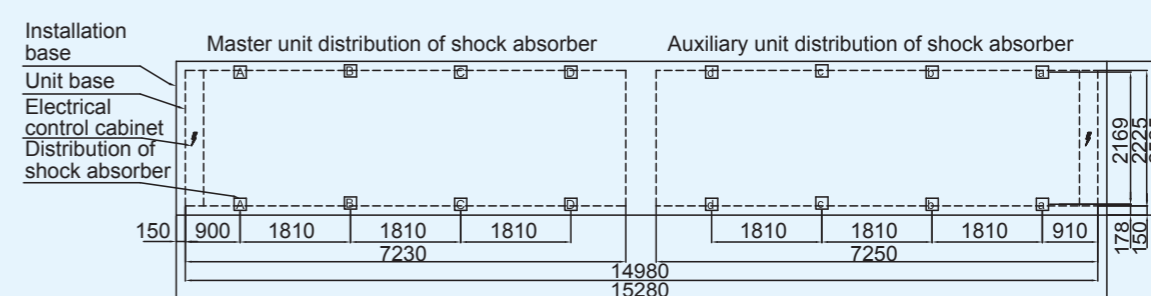
UAA400SV3



Model	Load of spring shock absorber (kg)							
	Master unit				Auxiliary unit			
	A	B	C	D	a	b	c	d
UAA400SV3	701	701	701	701	701	701	701	701

Unit: mm

UAA450SV3

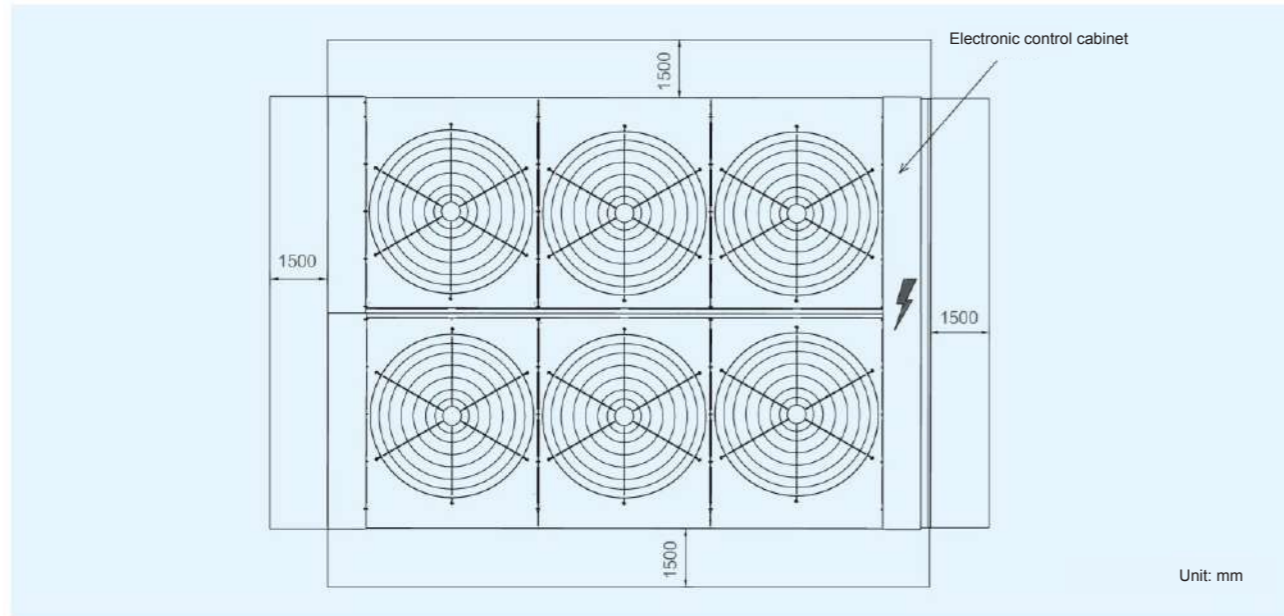


Model	Load of spring shock absorber (kg)							
	Master unit				Auxiliary unit			
	A	B	C	D	a	b	c	d
UAA450SV3	786	786	786	786	786	786	786	786

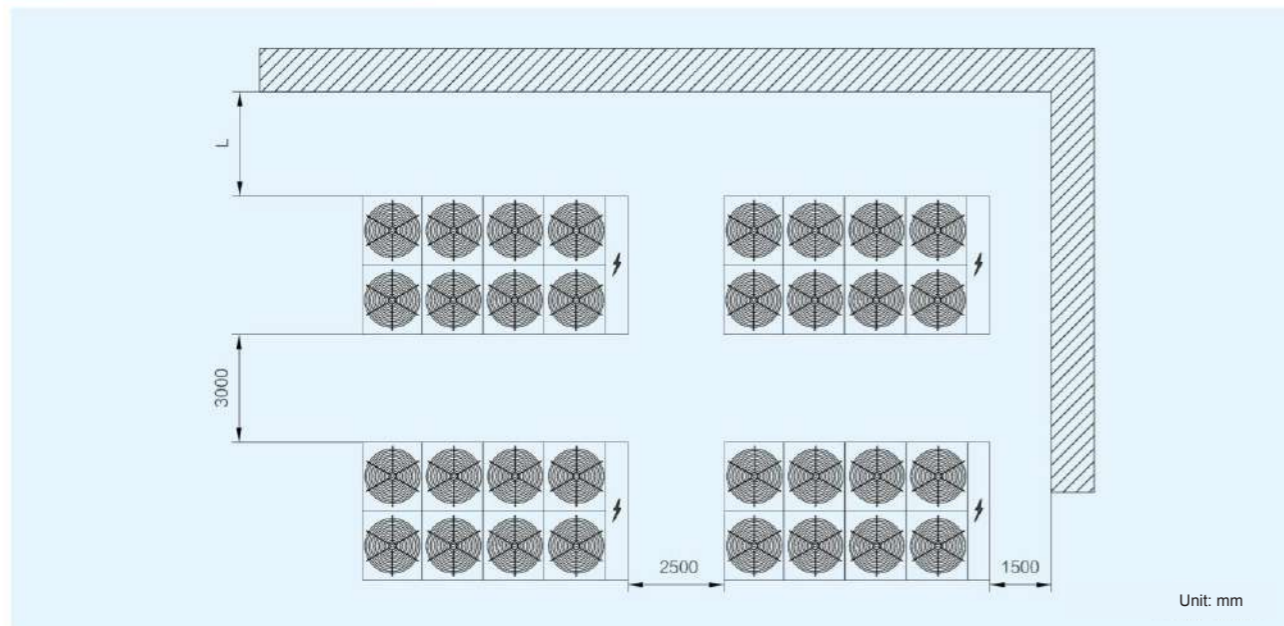
Unit: mm



## Requirements for Unit Maintenance



## Requirements for Unit Installation



- Note: ■ When installing a unit:
- (1) if the wall height  $H > 2.5$  m, the distance from the unit to the wall  $L \geq$  wall height  $H + 0.5$  m.
  - (2) if the wall height  $1.1 \text{ m} \leq H \leq 2.5$  m,  $L \geq 2.5$  m.
  - (3) if the wall height  $H < 1.1$  m,  $L \geq 1.5$  m.
- When installing multiple units, the maintenance space shall be met for each single unit.

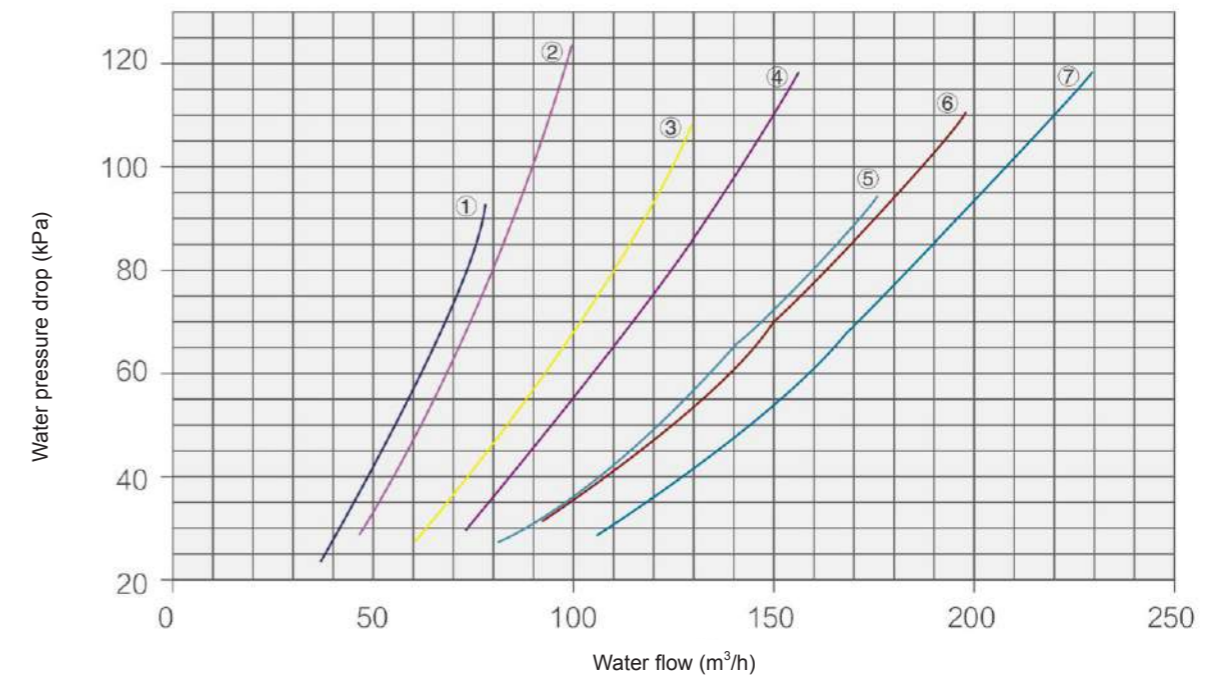
## Operating Range

Operating Mode	Cooling
Outdoor Highest Temperature (°C)	50
Outdoor Lowest Temperature (°C)	5
Highest Outlet Water Temperature at Water Side (°C)	15
Lowest Outlet Water Temperature at Water Side (°C)	4
Largest Temperature Difference at Water Side (°C)	10
Smallest Temperature Difference at Water Side (°C)	4

Note: For any requirement mentioned below, please contact the local sales branch of DAIKIN.

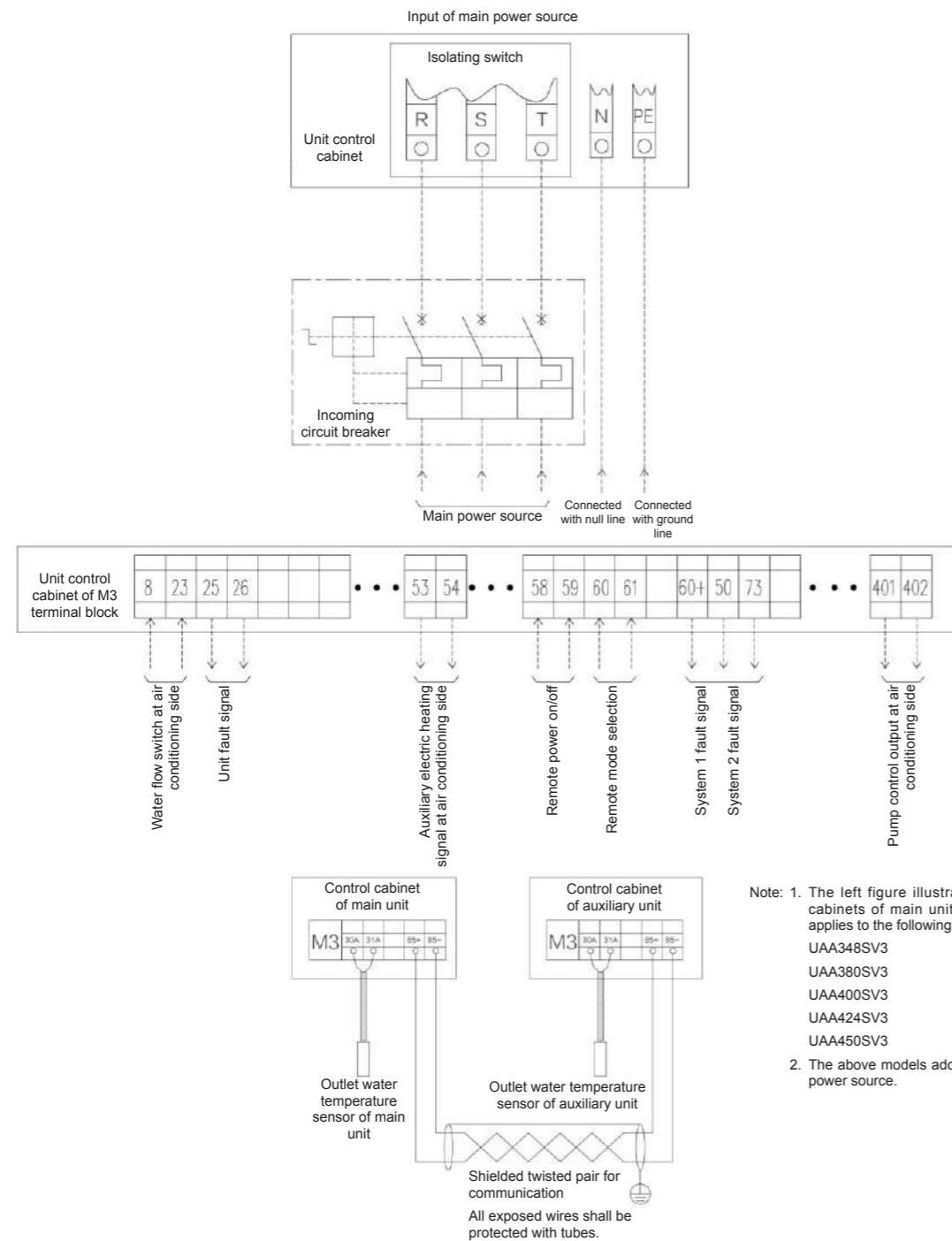
- The unit works for cooling at the ambient temperature of  $-10^{\circ}\text{C}$  to  $5^{\circ}\text{C}$ .
- The outlet water temperature of the unit for cooling is from  $-8^{\circ}\text{C}$  to  $4^{\circ}\text{C}$  or from  $15^{\circ}\text{C}$  to  $35^{\circ}\text{C}$ .

## Water Pressure Drop Diagram



- ① UAA105SV3 — ② UAA125SV3 — ③ UAA150SV3 — ④ UAA204SV3  
 — ⑤ UAA220SV3 — ⑥ UAA245SV3 — ⑦ UAA291SV3

## On-site Wiring Diagram



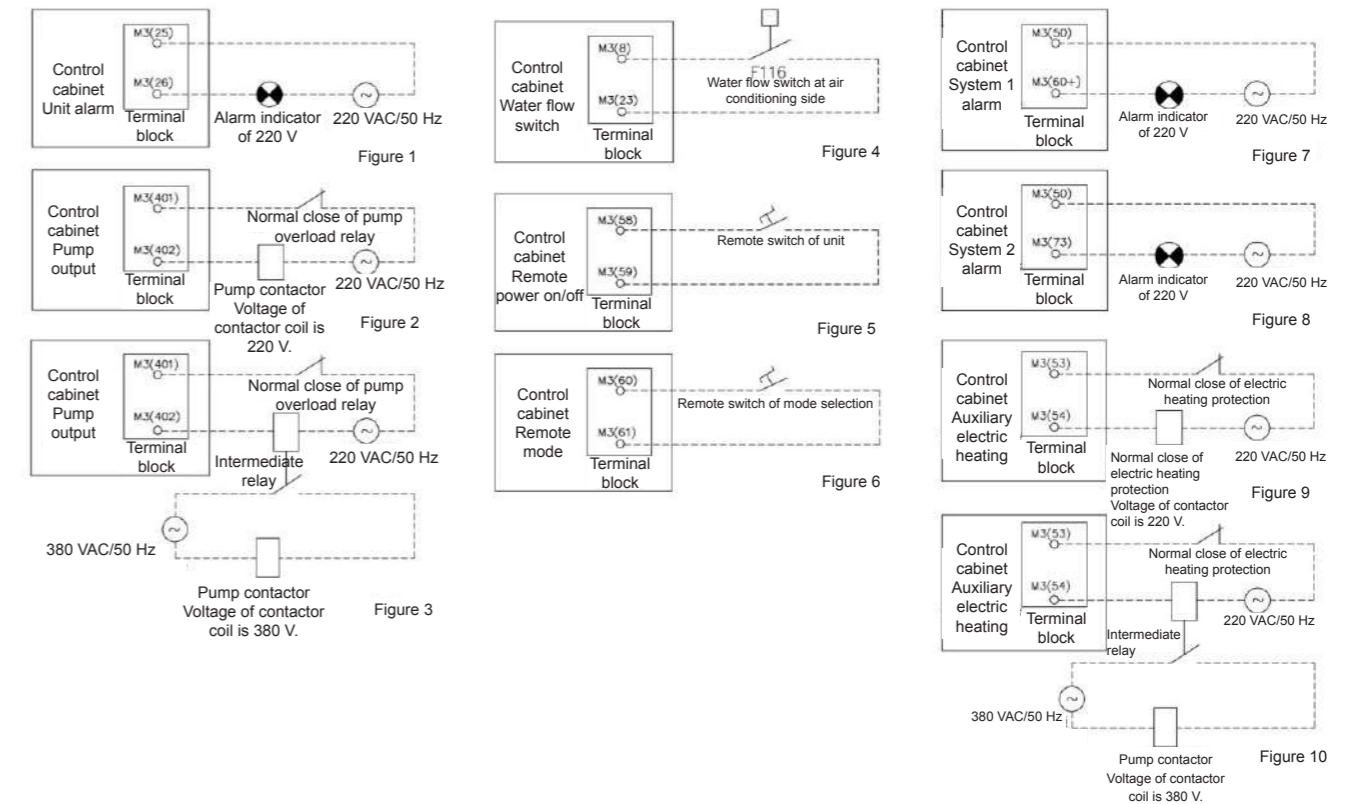
- Note: 1. The left figure illustrates wiring of control cabinets of main unit and auxiliary unit. It applies to the following unit models only:  
 UAA348SV3  
 UAA380SV3  
 UAA400SV3  
 UAA424SV3  
 UAA450SV3
2. The above models adopt dual-point wiring for power source.

### Remarks:

- 1) The parts in dotted line are provided and connected by the customer.
- 2) The customer must prepare an incoming circuit breaker.
- 3) Select the wire or incoming circuit breaker whose current is larger than the maximum running current of the unit.
- 4) The size of main power cable is not specified because it is influenced by layout and length. For details, refer to the relevant documents.
- 5) The UAA348-450 dual control unit is configured with the standard temperature sensor and communication cable.

## Diagram of Onsite Wiring

No.	Signal	Signal Type	Remarks
1	Unit fault signal	Passive dry contact output	Used to output the unit fault signal. Please see Figure 1.
2	Pump control output	Passive dry contact output	Used to output the unit pump control signal. Please see Figure 2 and Figure 3.
3	Water flow switch	Passive dry contact input	Used to check the water flow of the unit. Please see Figure 4.
4	Remote power on/off	Passive dry contact input	Used to remotely power on/off the unit. Please see Figure 5.
5	Remote mode selection*	Passive dry contact input	Used to remotely power on/off the unit. Please see Figure 6.
6	System 1 fault signal	Passive dry contact output	Used to output the system 1 fault signal. Please see Figure 7.
7	System 2 fault signal	Passive dry contact output	Used to output the system 2 fault signal. Please see Figure 8.
8	Auxiliary electric heating signal at air conditioning side	Passive dry contact output	Used to output the auxiliary electric heating signal. Please see Figure 9 and Figure 10.



### Remarks:

- 1) Running signals of the unit come from those of the pump. If M3(401) and M3(402) are connected with a pump contactor, running signals are retrieved from the normal open contact of the pump contactor.
- 2) When the unit is controlled in remote mode, the mode switch Q8 must be in the "heating" position and the short circuit sheet between M3(60) and M3(61) of the control cabinet terminal block must be removed.
- 3) The fault, pump output and dry steam auxiliary electric heating contacts can bear 230 VAC at the maximum. If the pump and electric heating contactors use coils of 380 V, the voltage must be converted. See Figure 3 or Figure 10.
- 4) Because the unit is continuously improved, the drawings equipped with the unit shall prevail.