



Commercial Air Conditioners **2017/2018**



Air cooled screw chiller
50Hz

Midea CAC

Midea CAC is a key division of the Midea Group, a leading producer of consumer appliances and provider of heating, ventilation and air conditioning solutions. Midea CAC has continued with the tradition of innovation upon which it was founded, and emerged as a global leader in the HVAC industry. A strong drive for advancement has created a groundbreaking R&D department that has placed Midea CAC at the forefront of a competitive field. Through these independent efforts and joint cooperation with other global enterprises, Midea has supplied thousands of innovative solutions to customers worldwide.



**Midea Company
Introduction**



**Midea CAC
Introduction**



There are three production bases: Shunde, Chongqing and Hefei.

MCAC Shunde: 38 product lines focusing on VRF, Split Products, Heat Pump Water Heaters, and AHU/FCU.

MCAC Chongqing: 14 product lines focusing on Water Cooled Centrifugal/Screw/Scroll Chillers, Air Cooled Screw/Scroll Chillers, and AHU/FCU.

MCAC Hefei: 11 product lines focusing on VRF, Chillers, and Heat Pump Water Heaters.

MIDEA GROUP
FORTUNE GLOBAL
FORTUNE
500

2016 >> Acquire 80% stake in Clivet.

2015 >> An international strategic Platform brings Midea Group, Carrier Corporation and Chongqing Mechanical & Electrical come together for the chiller business in the field of commercial air conditioners.

2014 >> Proudly introduced the new series of water cooled screw chillers.

2013 >> Launched the first super efficiency centrifugal chiller with dual stage compressor and full falling-film evaporator.

2010 >> Launched the centrifugal heat pump chiller units.

2008 >> Developed the Smart Star new generation Semi-hermetic centrifugal chiller.

2007 >> Won the first Midea centrifugal chiller project oversea.

2006 >> Launched the first Chinese VSD (Variable Speed Drive) centrifugal chiller unit.

2004 >> Acquired MGRE entered the chiller industry.

2001 >> The R134a (LC) series centrifugal chiller was named as the national key product.

1999 >> Entered the CAC field.



Introduction

Midea air cooled screw chillers are designed to meet current and future requirements in terms of reliability, energy efficiency and intelligent control. We use the best technologies available today: Twin-rotor screw compressors with a variable capacity valve are ideally matched to coolers and condensers optimally configured for superior heat transfer and unit efficiency. It is ideal for schools, hospitals, shopping malls, office buildings as well as factories and manufacturing plants.



Contents

05 Features and benefits

07 Normal condition (T1)

- ▶ Specifications
- ▶ Electrical data
- ▶ Water pressure drop
- ▶ Dimensions
- ▶ Options
- ▶ Installation

20 Typical piping system

21 Tropical condition (T3)

- ▶ Specifications
- ▶ Electrical data
- ▶ Water pressure drop
- ▶ Dimensions
- ▶ Options
- ▶ Installation

Features and benefits

Environmental responsibility >>



- ❖ A more efficient chiller means less power consumption, which reduces greenhouse gas(CO₂) emissions.
- ❖ R134a friendly refrigerant has no ozone-depletion potential.
- ❖ High efficiency, world class, sustainable and reliable performance.

Lowest total cost of ownership >>

- ❖ Reliability, low risk of uncomfortable downtime.
- ❖ The best parts, Bitzer Comp. & Danfoss EXV, Shneider electric.



- ❖ World-class testing facilities ensure the performance and reliability.
- ❖ Each unit was extensively tested to verify its operational reliability and to ensure a smooth startup.
- ❖ Serviceability, low maintenance costs.

Silent operation >>

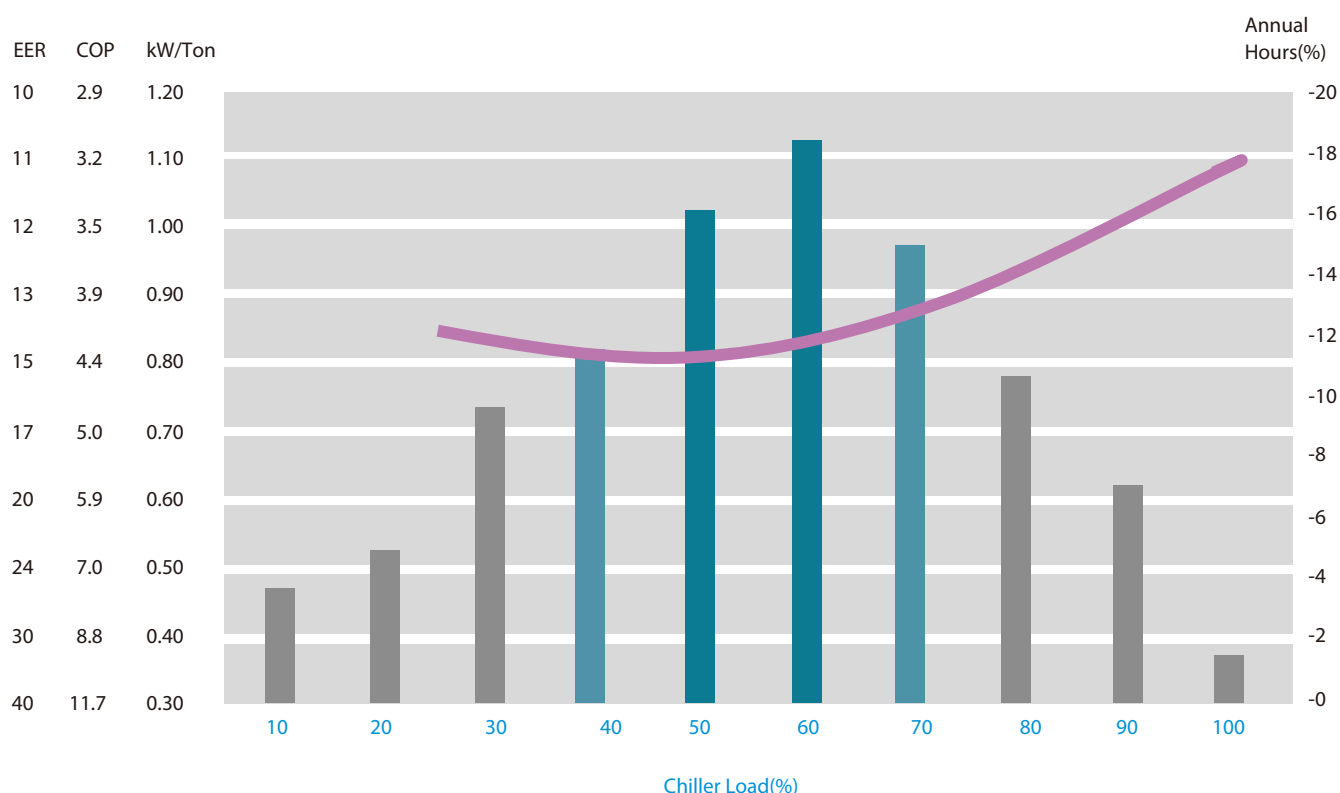
- ❖ Larger dimension impellers reduced speed causing less noise.
- ❖ The lower ambient temperature, the lower fan air flow, then reduce noise.
- ❖ Intelligent control logic balance the performance and working fan numbers to control the noise and power consumption.
- ❖ Super low noise model is optional.



Operating cost savings >>

Better IPLV:

- ❖ Follows AHRI 550/590 calculation which notes that 99% of operating hours are not at full load.
- ❖ The COP was optimized for 50% ~ 75% part load conditions.
- ❖ Larger ΔT of cooler reduces HVAC system running cost.



Design flexibility >>

- ❖ Six basic capacity modules, wide array of module combination.
- ❖ Standard module for flexible stock and fast delivery.
- ❖ Field-coupled to meet large project tonnage requirements.
- ❖ Low initial investment and maintenance cost.

Easy and fast installation >>

- ❖ Compact size and module design save the transportation, lifting and installation cost.
- ❖ The unit can be placed in service after being connected with power supply and water supply during field installation.

Normal condition (T1)

LSBLGW380/C



LSBLGW500/C

LSBLGW600/C
LSBLGW720/C

Specifications

LSBLGWXXX/C		380	500	600	720
Cooling capacity	kW	376	496	594	720
Power input	kW	124	159	187	234
COP	kW/kW	3.03	3.12	3.17	3.07
IPLV	kW/kW	3.93	4.02	3.94	3.87
Semi-hermetic screw compressor					
Circuit A	Quantity	1	1	1	1
Circuit B	Quantity	--	--	--	--
Oil recharge	Type	BSE170	BSE170	BSE170	BSE170
Circuit A	L	30	30	30	32
Circuit B	L	--	--	--	--
Refrigerant	Type	R134a	R134a	R134a	R134a
Circuit A	kg	76	90	105	140
Circuit B	kg	--	--	--	--
Control Type		EXV	EXV	EXV	EXV
Evaporator	Type	Shell and tube heat exchanger(DX)			
Water content	L	222	308	340	520
Water flow	m ³ /h	65.4	86	103.2	123.8
Pressure drop	kPa	39	54	56	58
Max. woking pressure(water side)	MPa	1	1	1	1
Pipe connection type		Victaulic coupling			
Water inlet/outlet pipe dim		DN125	DN125	DN125	DN150
Condenser	Type	Fin-coil	Fin-coil	Fin-coil	Fin-coil
Fan	Quantity	6	8	10	10
Total air flow	m ³ /h	23000x6	23000x8	23000x10	23000x10
Fan speed	rpm	940	940	940	940
Unit size(LxWxH)	mm	3810x2280x2370	4865x2280x2370	5800x2280x2370	5800x2280x2370
Shipping weight	kg	3320	4330	5000	5500
Running weight	kg	3540	4640	5340	6020

Note:

- Nominal cooling capacities are based on the following conditions:
Chilled water inlet/outlet temp: 12°C/7°C; Outdoor temp (DB/WB):35°C/24°C,Evaporator fouling factor=0.018 m²·°C/kW.
- The applicable ambient temperature range of R134a air-cooled screw units is 15°C ~ 43°C.

LSBLGW900/C


LSBLGW1000/C
LSBLGW1200/C


LSBLGW1420/C



LSBLGWXXX/C		900	1000	1200	1420
Cooling capacity	kW	902	996	1203	1419
Power input	kW	285	318	381	466
COP	kW/kW	3.16	3.13	3.15	3.04
IPLV	kW/kW	3.94	4.01	4.10	3.80
Semi-hermetic screw compressor					
Circuit A	Quantity	1	1	1	1
Circuit B	Quantity	1	1	1	1
Oil recharge	Type	BSE170	BSE170	BSE170	BSE170
Circuit A	L	30	30	30	32
Circuit B	L	30	30	30	32
Refrigerant	Type	R134a	R134a	R134a	R134a
Circuit A	kg	76	90	105	140
Circuit B	kg	90	90	105	140
Control Type		EXV	EXV	EXV	EXV
Evaporator	Type	Shell and tube heat exchanger(DX)			
Water content	L	620	600	770	910
Water flow	m ³ /h	154.8	172	206.4	244.2
Pressure drop	kPa	74	75	71	69
Max. woking pressure(water side)	MPa	1	1	1	1
Pipe connection type		Victaulic coupling			
Water inlet/outlet pipe dim.		DN150	DN150	DN200	DN200
Condenser	Type	Fin-coil	Fin-coil	Fin-coil	Fin-coil
Fan	Quantity	14	16	16	20
Total air flow	m ³ /h	23000x14	23000x16	23000x16	23000x20
Fan speed	rpm	940	940	940	940
Unit size(LxWxH)	mm	8800x2280x2370	9640x2280x2370	9640x2280x2370	11700x2280x2370
Shipping weight	kg	7750	8900	9100	11100
Running weight	kg	8370	9500	9870	12010

Note:

1) Nominal cooling capacities are based on the following conditions:

Chilled water inlet/outlet temp: 12°C/7°C; Outdoor temp (DB/WB):35°C/24°C,Evaporator fouling factor=0.018 m².°C/kW.

2) The applicable ambient temperature range of R134a air-cooled screw units is 15°C ~ 43°C.

Electrical data

Normal condition T1

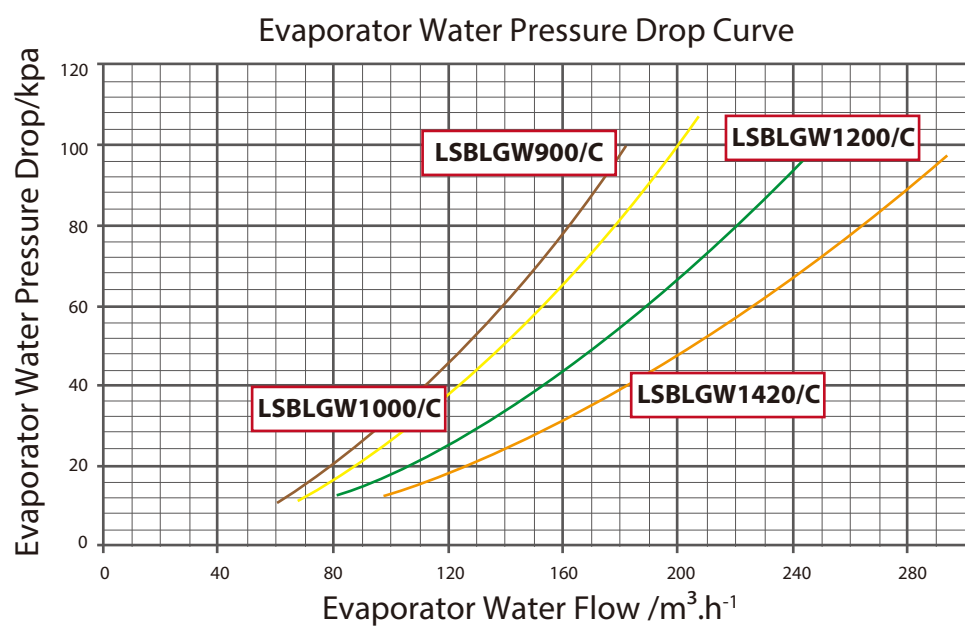
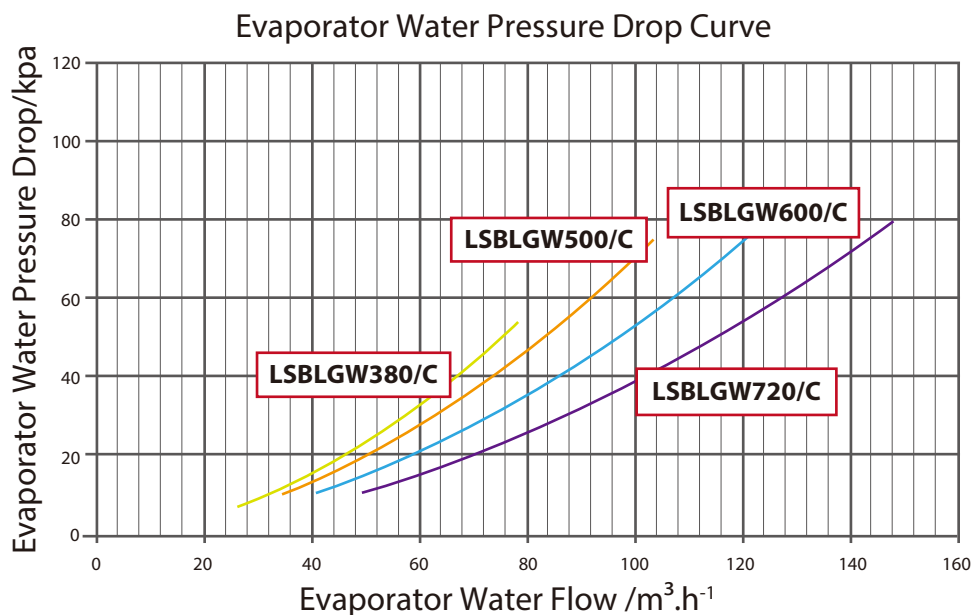
LSBLGWXXX/C		380	500	600	720
Standard voltage		380V 3Ph 50Hz			
Voltage range	V	340~420			
Max. running current	A	287	368	412	523
Max. power consumption	kW	163	209	239	294
Rated current	A	212	271	319	398
Compressor A					
Locked rotor Amps.	A	586	805	805	917
Max. allowed current	A	370	450	450	480
Rated current	A	183	232	270	349
Rated power	kW	109.6	139.8	163	210
Compressor B					
Locked rotor Amps.	A	--	--	--	--
Max. allowed current	A	--	--	--	--
Rated current	A	--	--	--	--
Rated power	kW	--	--	--	--
Fan					
Full load Amps.(each)	A	4.9	4.9	4.9	4.9
Power input(each)	kW	2.4	2.4	2.4	2.4
Total input	kW	14.4	19.2	24	24
Crankcase heater					
Voltage	V	220	220	220	220
Total input	kW	0.3	0.3	0.3	0.3
Total Amps.	A	1.36	1.36	1.36	1.36

LSBLGWXXX/C		900	1000	1200	1420
Standard voltage		380V 3Ph 50Hz			
Voltage range	V	340~420			
Max. running current	A	655	736	824	1046
Max. power consumption	kW	372.2	418	468	588
Rated current	A	486	542	650	793
Compressor A					
Locked rotor Amps.	A	586	805	805	917
Max. allowed current	A	370	450	450	447
Rated current	A	184	232	286	347
Rated power	kW	110.6	139.8	171.3	209
Compressor B					
Locked rotor Amps.	A	805	805	805	917
Max. allowed current	A	450	450	450	447
Rated current	A	233	232	286	347
Rated power	kW	140.8	139.8	171.3	209
Fan					
Full load Amps.(each)	A	4.9	4.9	4.9	4.9
Power input(each)	kW	2.4	2.4	2.4	2.4
Total input	kW	33.6	38.4	38.4	48
Crankcase heater					
Voltage	V	220	220	220	220
Total input	kW	0.6	0.6	0.6	0.6
Total Amps.	A	2.72	2.72	2.72	2.72

NOTE:

1. Customer to specify the exact nominal power supply available on site so that electrical components are selected accurately.
2. Main power must be supplied from a single field supplied and mounted fused circuit breaker.
3. The compressor crankcase heaters must be energized for hours before the unit is initially started or after a prolonged power disconnection.
4. All field wiring must be in accordance with local standards.
5. Neutral line required on 380V-3Ph-50Hz(5 wires) power supply.
6. Rated load Amps values are on nominal conditions.
7. The $\pm 10\%$ voltage variation from the nominal is allowed for a short time only, not permanently.

Water pressure drop



Unit Model	Min. Flow Rate		Max. Flow Rate	
	m³/h	GPM	m³/h	GPM
LSBLGW380/C	53	233	79	348
LSBLGW500/C	69	304	104	458
LSBLGW600/C	83	365	124	546
LSBLGW720/C	99	436	149	656
LSBLGW900/C	124	546	186	819
LSBLGW1000/C	138	608	207	912
LSBLGW1200/C	165	727	248	1092
LSBLGW1420/C	196	863	293	1290

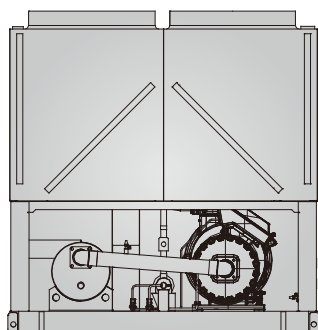
Dimensions

❖ Normal condition T1

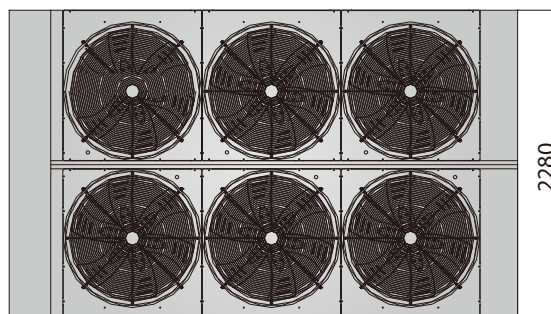
LSBLGW380/C

- ① CHILLED WATER OUTLET
- ② CHILLED WATER INLET
- ③ ELECTRICAL CONTROL BOX
- ④ LIFTING POINTS

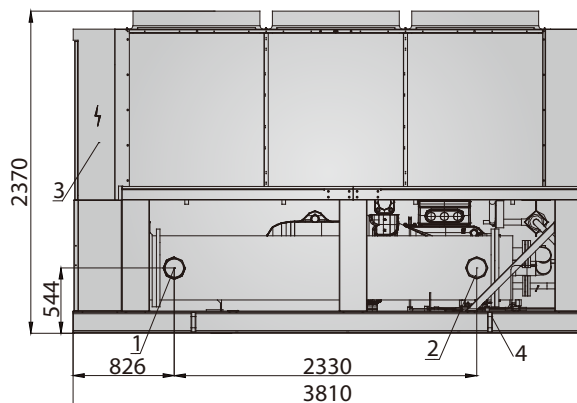
Air Discharge



LEFT VIEW

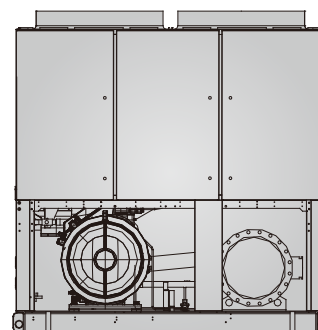


TOP VIEW



FRONT VIEW

Air Discharge

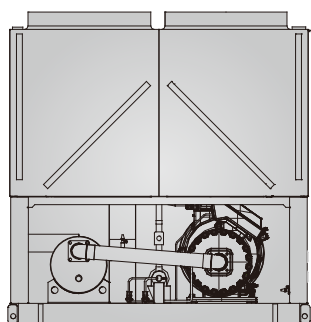


RIGHT VIEW

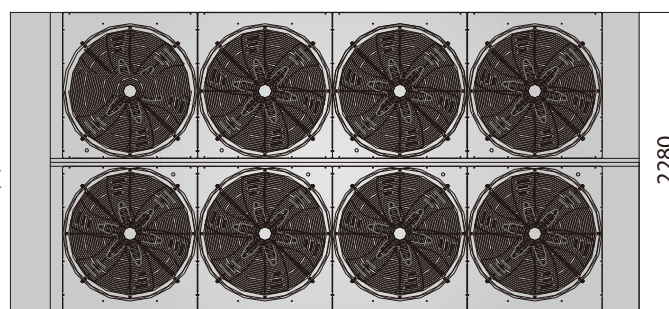
LSBLGW500/C

- ① CHILLED WATER OUTLET
- ② CHILLED WATER INLET
- ③ ELECTRICAL CONTROL BOX
- ④ LIFTING POINTS

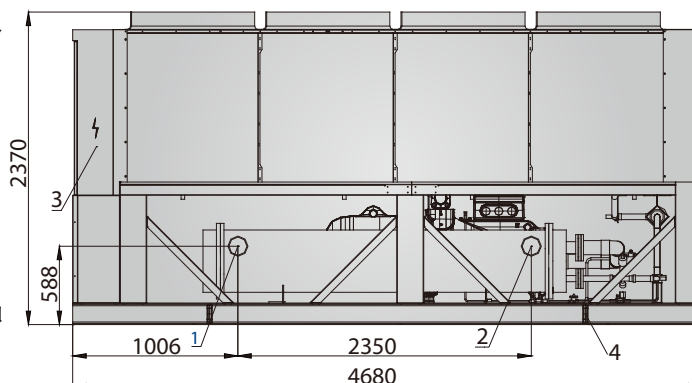
Air Discharge



LEFT VIEW

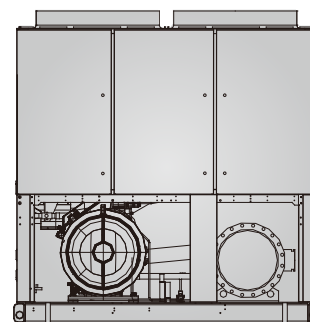


TOP VIEW



FRONT VIEW

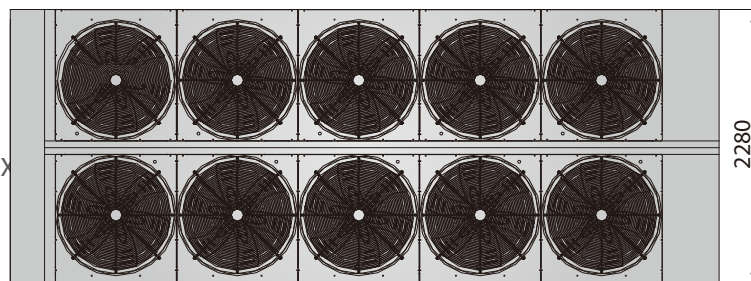
Air Discharge



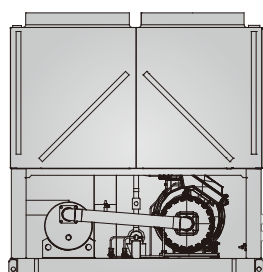
RIGHT VIEW

LSBLGW600/C

- ① CHILLED WATER OUTLET
- ② CHILLED WATER INLET
- ③ ELECTRICAL CONTROL BOX
- ④ LIFTING POINTS

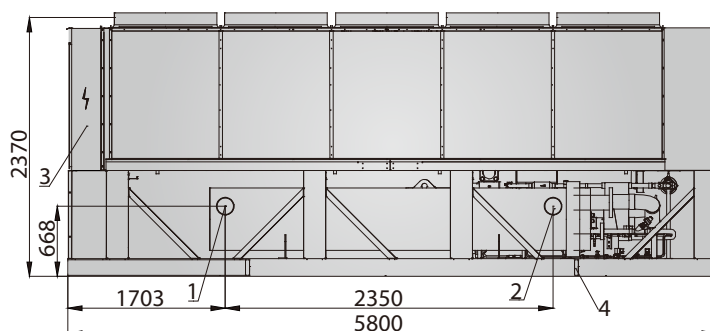


Air Discharge



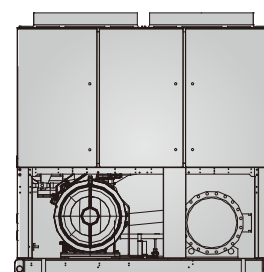
LEFT VIEW

TOP VIEW



FRONT VIEW

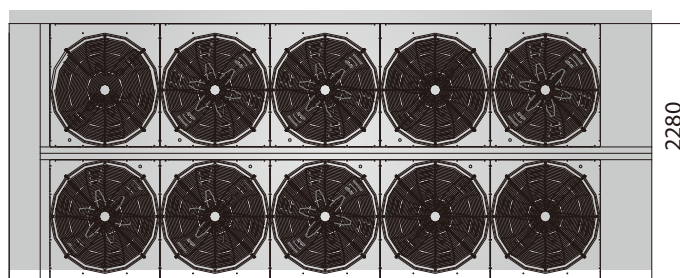
Air Discharge



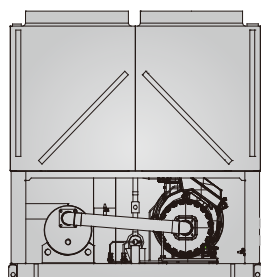
RIGHT VIEW

LSBLGW720/C

- ① CHILLED WATER OUTLET
- ② CHILLED WATER INLET
- ③ ELECTRICAL CONTROL BOX
- ④ LIFTING POINTS

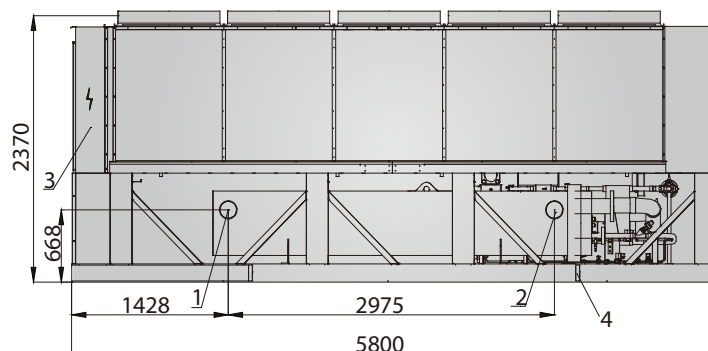


Air Discharge



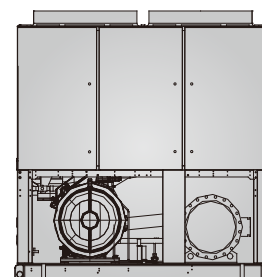
LEFT VIEW

TOP VIEW

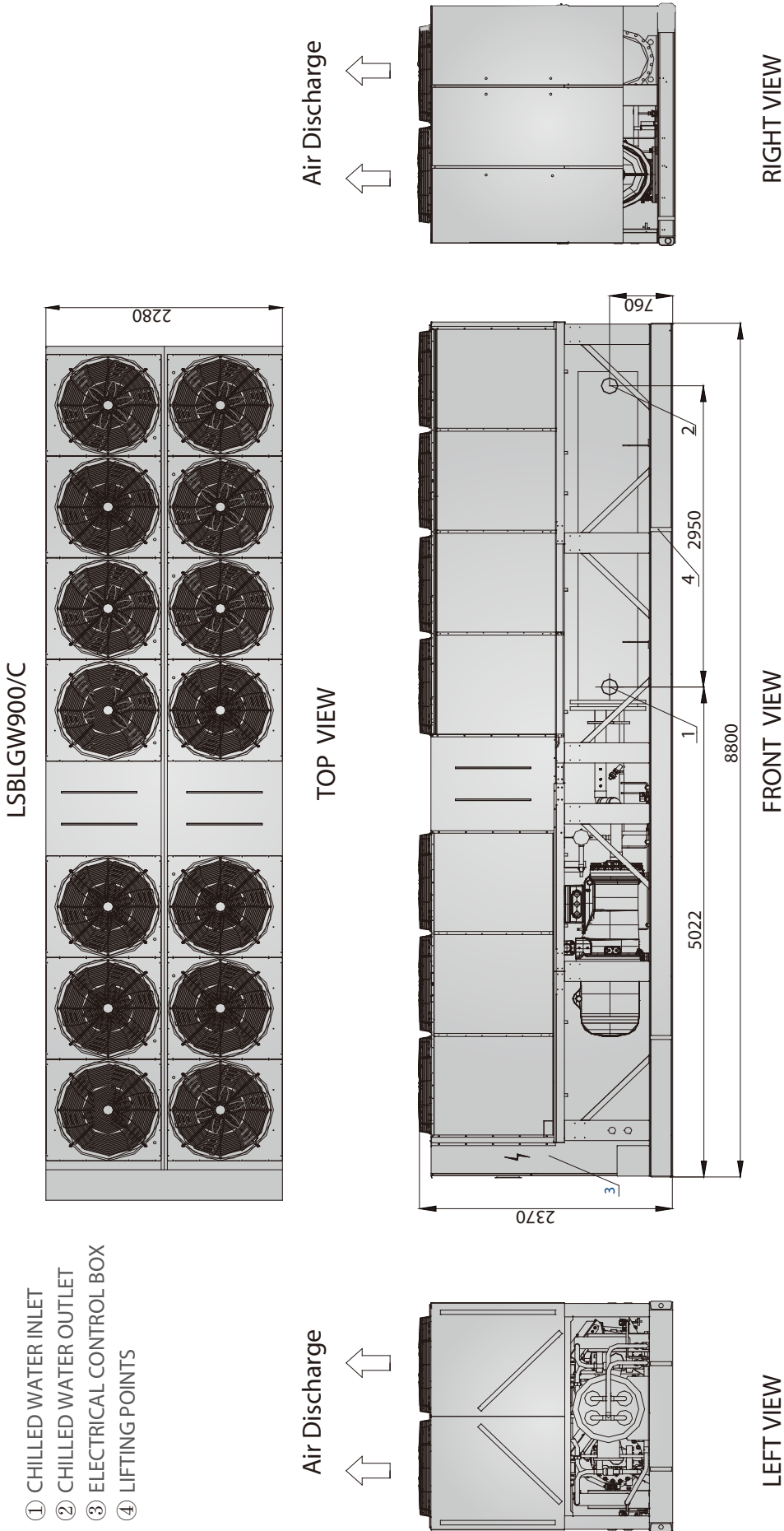


FRONT VIEW

Air Discharge

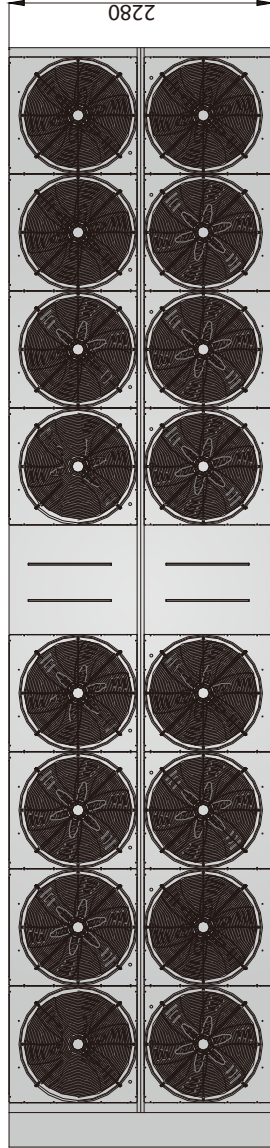


RIGHT VIEW



LSBLGW1000/C

- ① CHILLED WATER INLET
- ② CHILLED WATER OUTLET
- ③ ELECTRICAL CONTROL BOX
- ④ LIFTING POINTS

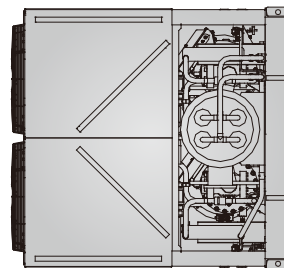


TOP VIEW

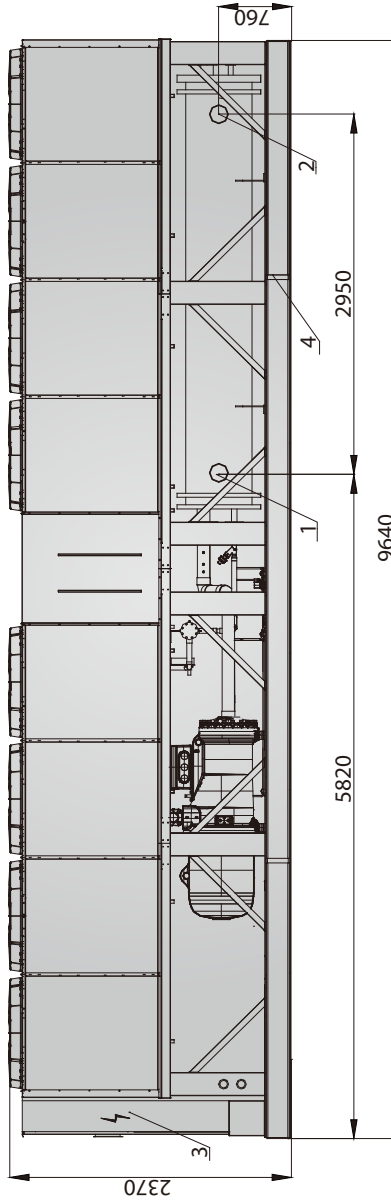
Air Discharge



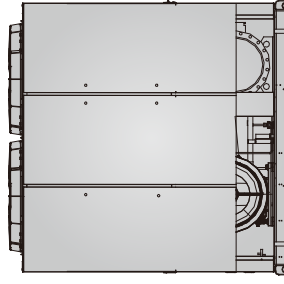
Air Discharge



LEFT VIEW



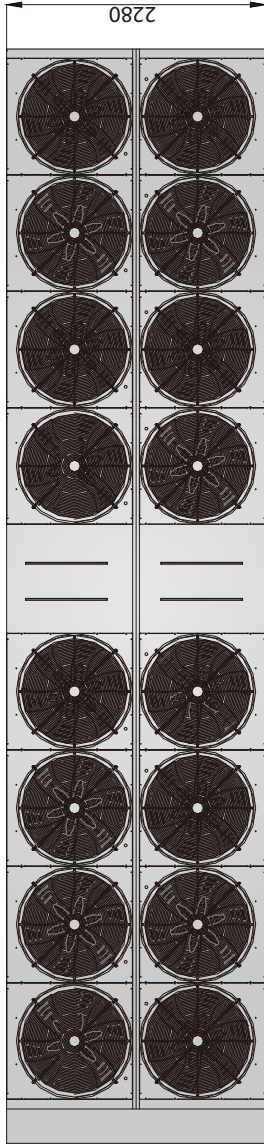
FRONT VIEW



RIGHT VIEW

LSBLGW1200/C

- ① CHILLED WATER INLET
- ② CHILLED WATER OUTLET
- ③ ELECTRICAL CONTROL BOX
- ④ LIFTING POINTS

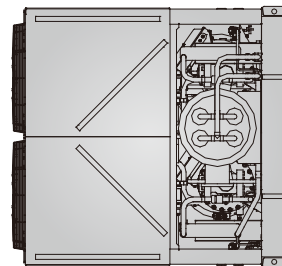


TOP VIEW

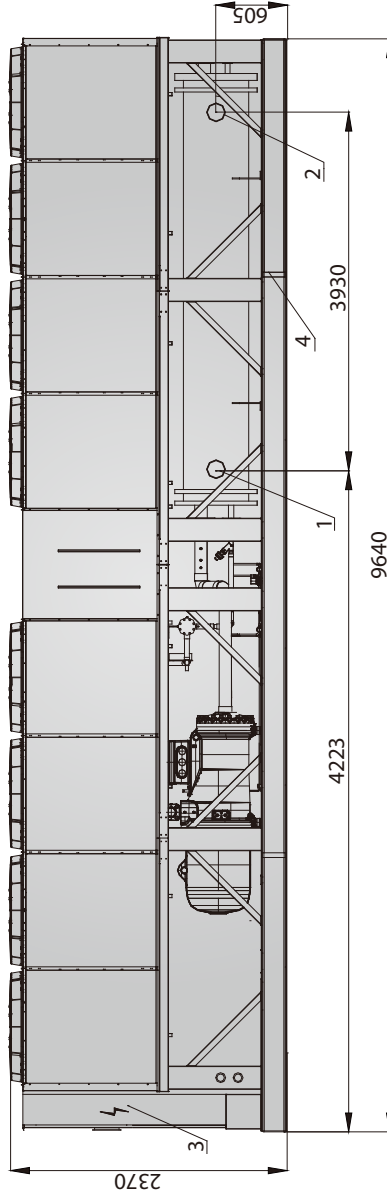
Air Discharge



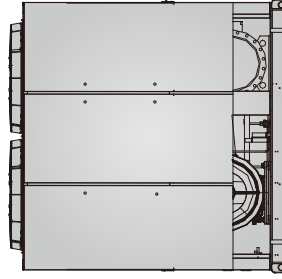
Air Discharge



LEFT VIEW



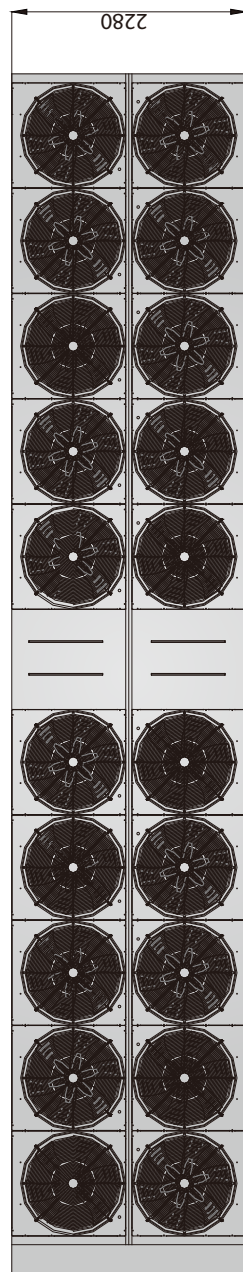
FRONT VIEW



RIGHT VIEW

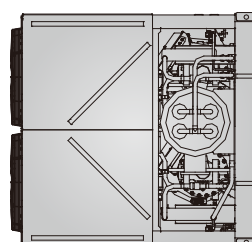
- ① CHILLED WATER INLET
- ② CHILLED WATER OUTLET
- ③ ELECTRICAL CONTROL BOX
- ④ LIFTING POINTS

LSBLGW1420/C

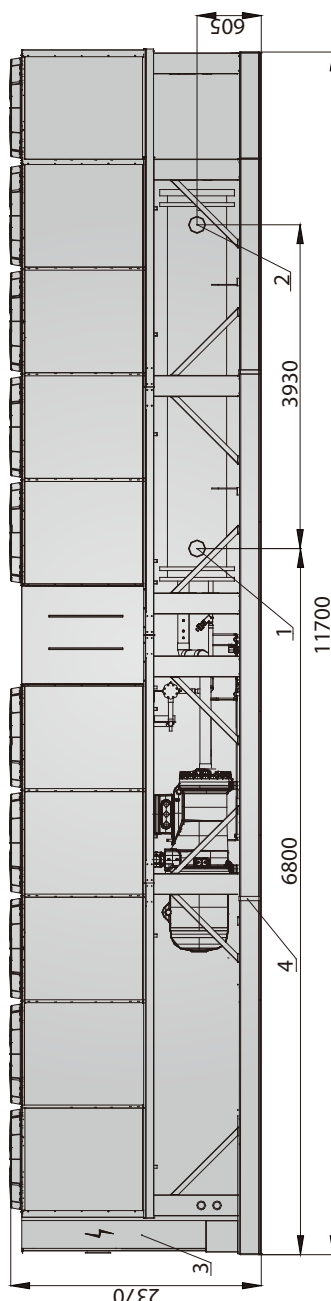


TOP VIEW

Air Discharge

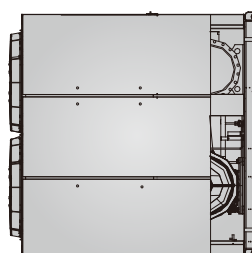


LEFT VIEW






FRONT VIEW

Air Discharge



RIGHT VIEW

Options

No.	Name	Model	Usage	Picture
1	Water flow switch	WFS-1001-H (Honeywell)	Installed on evaporator outlet pipe to prevent heat exchange pipe from frost crack.	
2	Spring isolator	MHD Series	To avoid vibration and noise, it must be used between base and foundation when unit is installed.	
3	Remote control cabinet	YCKZ-P	Can be installed in the control room. Through the cable connected to the unit touch screen, it can display all status information and complete all the operations of unit (startup/shutdown, error confirmation, etc.)	

Installation

Rigging instructions

All rigging should be attached through provide holes in base rails, as shown below.

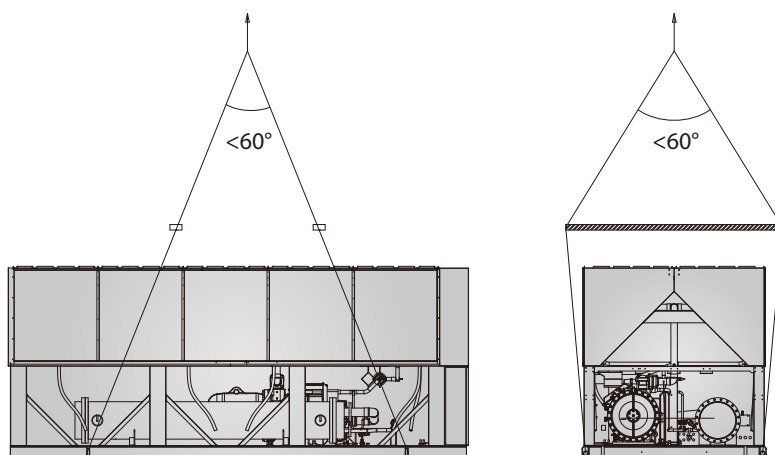
Center of gravity is not the center of the unit. Ensure center of gravity aligns with the main lifting point before lifting.

Use spreader bar when rigging, to prevent the slings from damaging the unit.

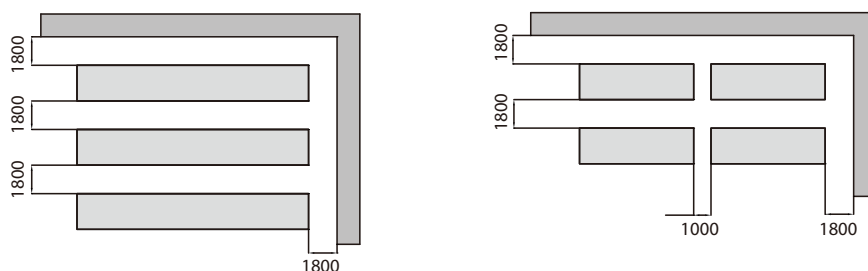
Caution:

All panels should be in place when rigging. Care must be taken to avoid damage to the coils during handling.

Insert packing material between coils & slings if necessary.

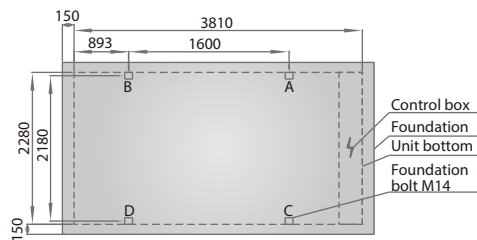


Installation clearance

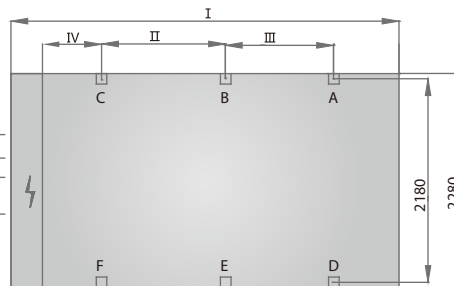


Mounting location

LSBLGW380/C

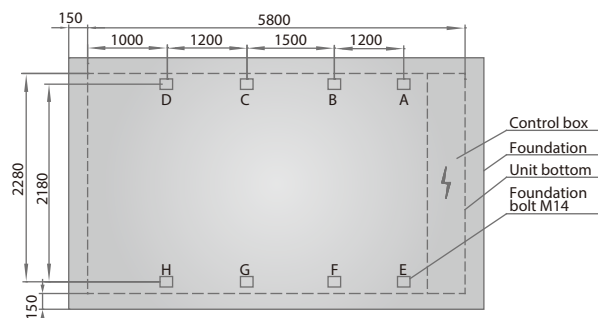


LSBLGW500(600)/C

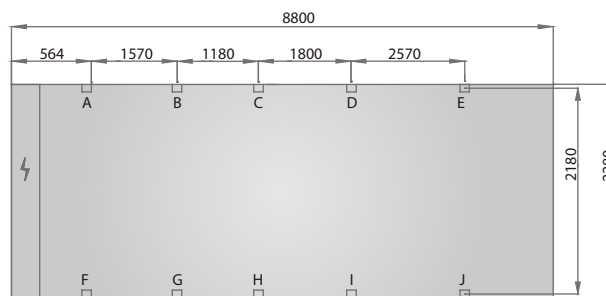


MODEL	500C	600C
I	4865	5800
II	1630	1500
III	2070	1500
IV	530	2000

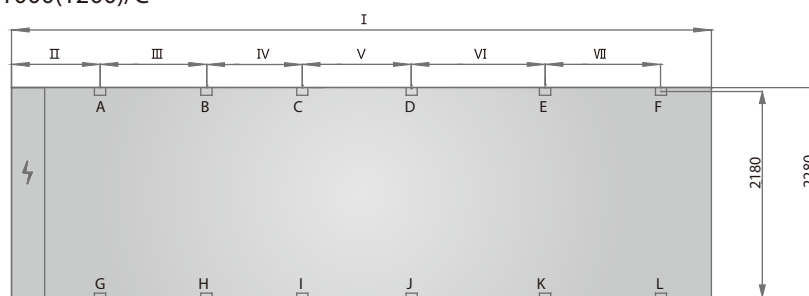
LSBLGW720/C



LSBLGW900/C

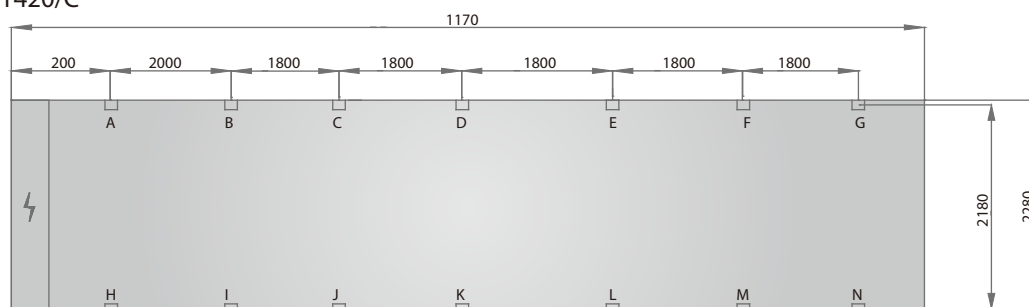


LSBLGW1000(1200)/C



MODEL	1000C	1200C
I	9640	9640
II	390	400
III	1790	1800
IV	1500	1500
V	1500	1500
VI	1800	1800
VII	1800	1800

LSBLGW1420/C

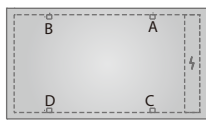


Note: All dimensions are in mm

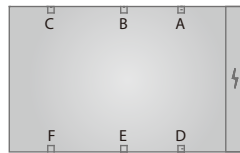
Load distribution

Unit:KG

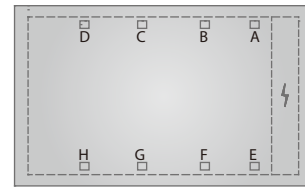
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N
LSBLGW380/C	869	901	869	901	-	-	-	-	-	-	-	-	-	-
LSBLGW500/C	633	855	832	633	855	832	-	-	-	-	-	-	-	-
LSBLGW600/C	815	934	921	815	934	921	-	-	-	-	-	-	-	-
LSBLGW720/C	687	765	800	758	687	765	800	758	-	-	-	-	-	-
LSBLGW900/C	814	944	947	747	733	814	944	947	747	733	-	-	-	-
LSBLGW1000/C	726	912	917	732	731	732	726	912	917	732	731	732	-	-
LSBLGW1200/C	789	912	905	779	777	773	789	912	905	779	777	773	-	-
LSBLGW1420/C	794	925	954	936	800	798	798	794	925	954	936	800	798	798



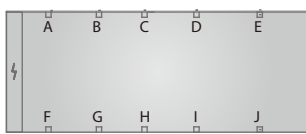
LSBLGW380/C



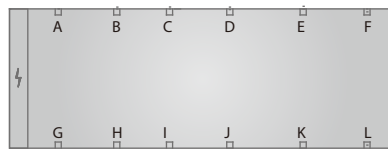
LSBLGW500(600)/C



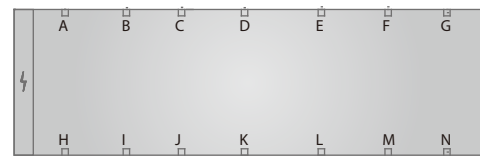
LSBLGW720/C



LSBLGW900/C



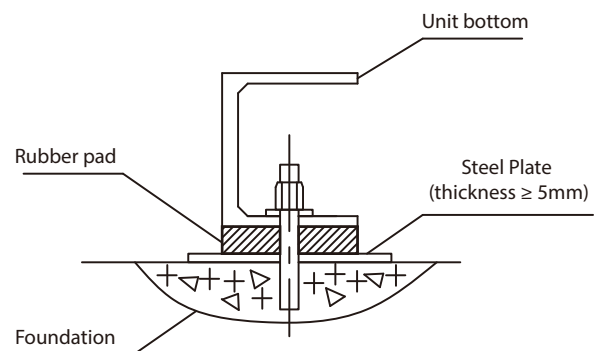
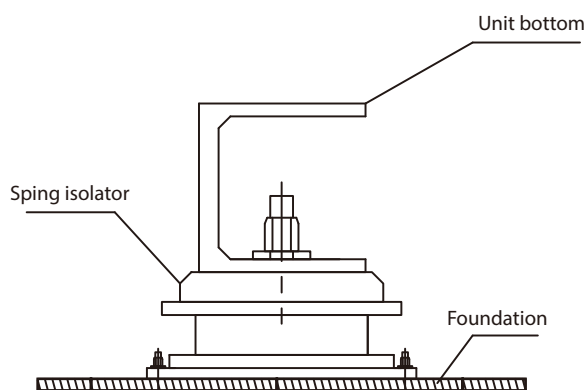
LSBLGW1000(1200)/C



LSBLGW1420/C

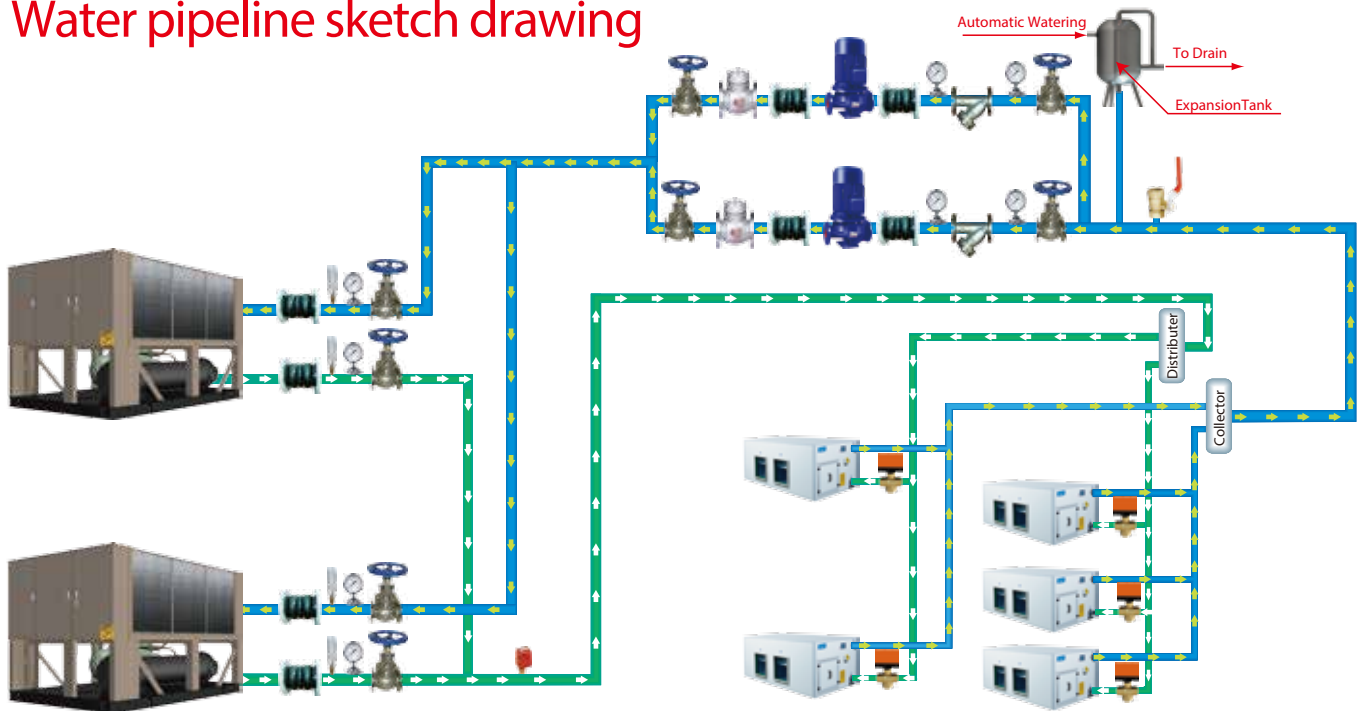
Installation requirements:

1. Be sure to take the base preparation and structure into consideration seriously during installation, particularly on rooftop installations in order to avoid noise and vibration. Consulting the building designer before conducting installation is recommended.
2. A drainage ditch should surround the base to ensure dewatering occurs.
3. Anti-vibration pad is to be placed between the base frame and foundation in order to avoid vibrations and unnecessary noise, and make sure the unit is horizontal during installation.













Typical piping system

Water pipeline sketch drawing



❖ Typical piping system

The table below describes the symbols.

Symbol	Symbol Explanation	Symbol	Symbol explanation
	Stop Valve		Y-Shaped Filter
	Pressure Gauge		Temperature gauge
	Water Flow Switch		Water Pump
	3-Way Valve		One-way valve
	Flexible joint		Air vent valve