

Gipson

Heating and Cooling Products



AIR COOLED MINI CHILLER

Badban Tahviah Parsian Co.

2022-23 General Catalogue
Commercial Air Conditioning



Introduction



Compressor

The combination of COPELAND Semi-Hermetic Scroll type
With high coefficient of performance
Anti Vibration Joint
Oil heater System (optional)
Dehumidifier filter dryer
Safety valve for protect compressor at high Pressure
Liquid Line Solenoid Valve
Liquid Line Pressure Switch and Pressure Transmitter

Condenser

Our new U shaped style that bring more heat exchange surface compared conventional flat heat exchanger
Fin and Tube series
Thanks to this technology, the dimensions of the device have been reduced
With high efficiency and low pressure drop
3/8" copper tube with up to 450 PSI compressive strength
12FPI number of Fin per Inch

Evaporator

Shell and tube type including steel pipe for shell and copper tubes with 3/8 inch internal groove and compressive strength of 300 PSI
Tested in accordance ASME section VIII standard
Special design for low pressure drop and optimized heat transfer
Water Strainer
Anti Freeze System

Fan

Axial low noise model
Variable frequency drive for saving energy and reducing sound level (optional)
Side discharge
Sound reduction diffuser (optional)
EUROVENT trademark with "IP54" grading for difference models

Electrical and safety equipment

SIEMENS PLC

Ability to synchronize with BMS

Compatible with network connection protocols

DANFOSS trademark high pressure and low pressure sensor

Switch cabinet with IP54

Switch cabinet with SIEMENS trademark;

Main switching, phase control, Contactor, MSPS

UPS buffered controller to prevent damage during operating (optional)

Light and socket in the switch cabinet

Alarm system for faults

Body

Galvanized steel sheet with electrostatic paint coated

Sound insulation for reducing sound level

Manufactured with NC & CNC machines

Air arteries on the columns of body to allow more air to pass through the U section of condenser

PLC Programming

Automatic troubleshooting

Display the performance status of all control parameters

Display operating hours

Display number of start times of compressors separately

Complete observance of the operation schedule of the compressors

Recording of the latest errors that have occurred

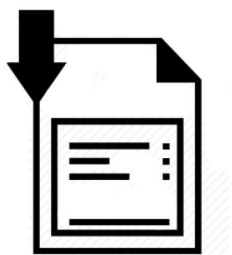
Liquid Line Equipment

DANFOSS TEV

CASTEL trademark solenoid valve and sight glass

Receiver with Rotolock valve

CASTEL trademark filter dryer for dehumidification refrigerant



Nomenclature

H TL S D 04 A 1 S C X X X X X →

* Option codes will be added to the end of the nomenclature respectively.

Compressor Manufacturer

- C = COPELAND
- D = DANFOSS
- P = PANASONIC

Evaporator

- B = Brazed Heat Exchanger
- S = Shell and Tube Heat Exchanger

Number of Compressor

- 1
- 2

Number of Circuit

- A = 1
- B = 2

Capacity (HP)

- | | |
|---|----|
| 4 | 8 |
| 5 | 10 |
| 6 | 12 |

Refrigerant

- C = R22
- D = R407C
- E = R134a

Manufacturing Series

- | | |
|---|---|
| N | R |
| S | G |
| A | |

Model

- Q = Quantum P = Pro
- T = Typhon
- TL = Tesla (Scroll Compressor Series)

Unit Type

- H = Air Cooled M = Micro
- W = Water Cooled
- A = Absorption

Standard Features

- This table contains a complete explanation of each parts used in units.

Item	Description	Product's Brand
Control Panel	<ul style="list-style-type: none"> ▪ Controlling the unit circuit for the required closed loop. ▪ Providing the preview and the configuration of controlling system parameters to the user. ▪ Equipped with the advanced communication interfaces. ▪ Compatible with grid connection protocols. ▪ Displaying errors. 	SIEMENS
Phase Control	<p>Phase sequence and phase loss sensors are designed for the following measures:</p> <ul style="list-style-type: none"> ▪ Protecting three-phase electric motors. ▪ Controlling the phase sequence, zero control in zero-based series, controlling each single phase with adjacent phase, and controlling each phase and zero to provide standard electricity input. ▪ Detecting the defections leading motor damages such as voltage failure in one or more phases or voltage imbalance between them. ▪ Preventing rotation of the motor the wrong way. 	SIEMENS
Terminals	<ul style="list-style-type: none"> ▪ Acting as a connector or separator between electrical panel tray and other components of the device (in terms of electrical performance). 	KLEMSAN
Contactora	<ul style="list-style-type: none"> ▪ Connecting and disconnecting the electric current of the circuit. 	SIEMENS
MSPS	<p>Motor Start Protection System to performs an electric motor:</p> <ul style="list-style-type: none"> ▪ isolation. ▪ motor protection against overload and short circuit. ▪ control of the motor. 	SIEMENS
Liquid Line	<p>Includes:</p> <ul style="list-style-type: none"> ▪ Sight Glass, Filter Dryer, Safety Valve, Solenoid Valve, Bulb Valve. 	CASTEL
Sensors	<p>Includes:</p> <ul style="list-style-type: none"> ▪ Pressure Switch, Pressure Transmitter, Temperature Sensor. 	DANFOSS
TEV	<p>Thermal Expansion Valve:</p> <ul style="list-style-type: none"> ▪ Ensuring accurate control of refrigerant injection into the evaporator. 	DANFOSS

Standard Features

Item	Description	Product's Brand
Main Switch	<ul style="list-style-type: none"> Power Switch (On/Off). Controlling the input current to the device. 	SIEMENS
Condenser ¹	<ul style="list-style-type: none"> Fin and tube "U" shaped series with 12FPI number of Fin per Inch including 3/8" copper tube and compressive strength of 450 PSI. 	AFRA
Evaporator ¹	<ul style="list-style-type: none"> Shell and tube type including steel pipe for shell and copper tubes with 3/8-inch internal groove and compressive strength of 300 PSI. Equipped with water flow switch, water strainer, Anti Freeze System. Tested in Accordance "ASME Section VIII" Standard. IT Trademark Insulator. 	REFKAR
Liquid Receiver	<ul style="list-style-type: none"> Eliminating gas refrigerant. Ensuring that pure liquid refrigerant enters the expansion valve. Equipped with Rotolock Valve for easier operation and maintenance. 	AFRA

Options

- This table includes information of equipment that their installation enhances the unit's efficiency.

Item	Description	Product's Brand
1. Soft Starter	<ul style="list-style-type: none"> ▪ Reducing the mechanical stress and shocks caused by starts and stops to the compressor ▪ Controlling the consuming current of compressors and protecting them from the electrical overload ▪ Having the minimum amount of reactive power ▪ To perform a safe boot, three asynchronous phases are used ▪ Consistently controlling of the compressor voltage source in the operating stage ▪ The compressor is aligned with load behavior to accelerate the mechanical equipment's operation ▪ Increasing the life span 	SIEMENS
2. VFD Controller	<ul style="list-style-type: none"> ▪ Controlling the fan speed. ▪ Reducing the fan sound level. ▪ Balancing the refrigerant pressure in the condenser. ▪ Increasing the compressor's life span. ▪ Preventing the frequent start / stops that damage the equipment. 	SIEMENS
3. Oil Heater	<ul style="list-style-type: none"> ▪ Preventing the mix of the refrigerant and the compressor oil. 	-
4. Oil Separator	<ul style="list-style-type: none"> ▪ Preventing the compressor oil discharge. ▪ Returning the oil to the compressor leading an automatic lubrication for the compressor's parts. ▪ Preventing the mix of the oil and the refrigerant which makes acid in the system. ▪ Protecting from corrosion. ▪ Protecting the compressor from damage. 	CASTEL
5. Accumulator	<ul style="list-style-type: none"> ▪ Preventing the liquid refrigerant to enter the compressor. ▪ Reevaporating of collected refrigerant in Accumulator to enhance the compressor's efficiency. ▪ Protecting the compressor from damage. 	CASTEL
6. Economizer	<ul style="list-style-type: none"> ▪ Increasing the efficiency by creating a sub-circuit. ▪ Improving the system performance. ▪ Energy saving. ▪ Utilizing brazed plate heat exchanger. 	KELVION (Heat Exchanger)

- Option codes must be added to the end of the nomenclature and it is mandatory in the registration process.

Options

Item	Description	Product's Brand
7. Equipment of Water Circuit	A. Linear pump ¹ with water flow switch B. Close expansion tank	-
8. Switch Cabinet	A. UPS buffered controller to prevent damage during operating. B. Cooling system specially for switch cabinet.	-
9. Fan	A. ZILABEG trademark B. ROSENBERG trademark C. Sound reduction diffuser. (Executable only for EUROVENT fans)	-

1. Head of pump must be mentioned in the registration process.

- Option codes must be added to the end of the nomenclature and it is mandatory in the registration process.



Technical Data



Model No.		HTLSD04A1SC	HTLSD05A1SC	HTLSD06A1SC	
1	Cooling capacity	KW	10.3	12.6	15.0
		RT	2.92	3.57	4.25
	Total input power	KW	3.8	4.56	5.2
	Total rated current	A	8.4	10	10.5
EER		-	2.70	2.76	2.88
2	Cooling capacity	KW	9.6	11.7	14
		RT	2.7	3.3	4.0
	Total input power	KW	4.22	5.03	5.77
	Total rated current	A	8.9	10.5	11.4
EER		-	2.27	2.32	2.42
ESEER		-	3.64	3.74	3.93
Evaporator	Type	-	Shell and tube		
	Brand	-	REFKAR		
	Water flow rate	gpm	11.5	11.5	14
		m ³ /h	2.6	2.6	3.2
	Water pressure drop	kPa	2.7	2.7	4.3
Max design pressure	Mpa	0.8			
Condenser	Type	-	U shape		
	Brand	-	AFRA GOSTAR		
	Heat exchanger	-	Aluminium fin		
	Number of rows	-	2		
	Fins per inch	FPI	12		
Fan	Type	-	Axial fan		
	Brand	-	EUROVENT		
	Number	-	2		
	Speed	rpm	1350		
	Diameter	mm	450		
	Air flow rate	m ³ /h	4700		
	Discharge	Side/Top	Side		
Compressor	Type	-	Semi-Hermetic Scroll		
	Brand	-	COPELAND		
	Model	-	ZR48K3E-TFD	ZR61KCE-TFD	ZR72KCE-TFD
	Combination	Pieces	1		
	Oil type	-	POE RL32-3MAF		
	Oil charge amount	L	1.36	1.66	1.77
	Oil heater	-	• (Optional)		
Refrigerant	Type	-	R407C		
Ambient temp. range	°C	21 ~ 46			
Command control system	Type	-	Siemens PLC		
Sound pressure level	dB(A)	~ 69	~ 70		
Power supply	Ø, V, Hz	3, 400, 50			
Dimension	WxHxD	603x1800x703			
Net weight	kg	~ 150			

1 : Chilled water inlet / outlet : 12 °C / 7 °C
 Outdoor ambient temp. : 35 °C DB
 Sea level : 4000 ft
 Fan input power included
 Pump input power not included

2 : Chilled water inlet / outlet : 12 °C / 7 °C
 Outdoor ambient temp. : 40 °C DB
 Sea level : 4000 ft
 Fan input power included
 Pump input power not included

- Evaporating SST : 4.1 °C
 - Water side fouling factor : 0.000018 m². °C / KW
 - ESEER calculations is based on European standard.
 - Measuring sound pressure level at 3m away and ±3dB tolerance.
 - The characteristics of water flow rate and water pressure drop are given based on case "1".

Model No.		HTLSD08B2SC	HTLSD10B2SC	HTLSD12B2SC	
1	Cooling capacity	KW	20.5	25.1	29.9
		RT	5.83	7.14	8.50
	Total input power	KW	7.7	9.2	10.5
	Total rated current	A	15.5	18.5	19.6
	EER	-	2.66	2.72	2.84
2	Cooling capacity	KW	19.2	23.3	27.9
		RT	5.5	6.6	7.9
	Total input power	KW	8.6	10.2	11.7
	Total rated current	A	16.5	19.6	21.4
	EER	-	2.24	2.29	2.39
ESEER		-	3.57	3.67	3.88
Evaporator	Type	-	Shell and tube		
	Brand	-	REFKAR		
	Water flow rate	gpm	16.5	21	23
		m ³ /h	3.7	4.8	5.2
	Water pressure drop	kPa	5.4	8.5	11
Max design pressure	Mpa	0.8			
Condenser	Type	-	U shape		
	Brand	-	AFRA GOSTAR		
	Heat exchanger	-	Aluminium fin		
	Number of rows	-	2	3	
	Fins per inch	FPI	12		
Fan	Type	-	Axial fan		
	Brand	-	EUROVENT		
	Number	-	2		
	Speed	rpm	1430		
	Diameter	mm	500		
	Air flow rate	m ³ /h	9200		
	Discharge	Side/Top	Side		
Compressor	Type	-	Semi-Hermetic Scroll		
	Brand	-	COPELAND		
	Model	-	ZR48K3E-TFD	ZR61KCE-TFD	ZR72KCE-TFD
	Combination	Pieces	2		
	Oil type	-	POE RL32-3MAF		
	Oil charge amount	L	1.36	1.66	1.77
	Oil heater	-	• (Optional)		
Refrigerant	Type	-	R407C		
Ambient temp. range	°C	21 ~ 46			
Command control system	Type	-	Siemens PLC		
Sound pressure level			~ 72		
Power supply			Ø, V, Hz		
Dimension	WxHxD		600x1800x1158		
Net weight			~ 300		

1 : Chilled water inlet / outlet : 12 °C / 7 °C
 Outdoor ambient temp. : 35 °C DB
 Sea level : 4000 ft
 Fan input power included
 Pump input power not included

2 : Chilled water inlet / outlet : 12 °C / 7 °C
 Outdoor ambient temp. : 40 °C DB
 Sea level : 4000 ft
 Fan input power included
 Pump input power not included

- Evaporating SST : 4.1 °C
 - Water side fouling factor : 0.000018 m² . °C / KW
 - ESEER calculations is based on European standard.
 - Measuring sound pressure level at 3m away and ±3dB tolerance.
 - The characteristics of water flow rate and water pressure drop are given based on case "1".

According to our innovation policy , some specifications may be change without prior notification.

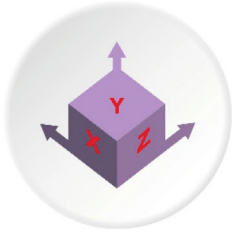


Performance Data

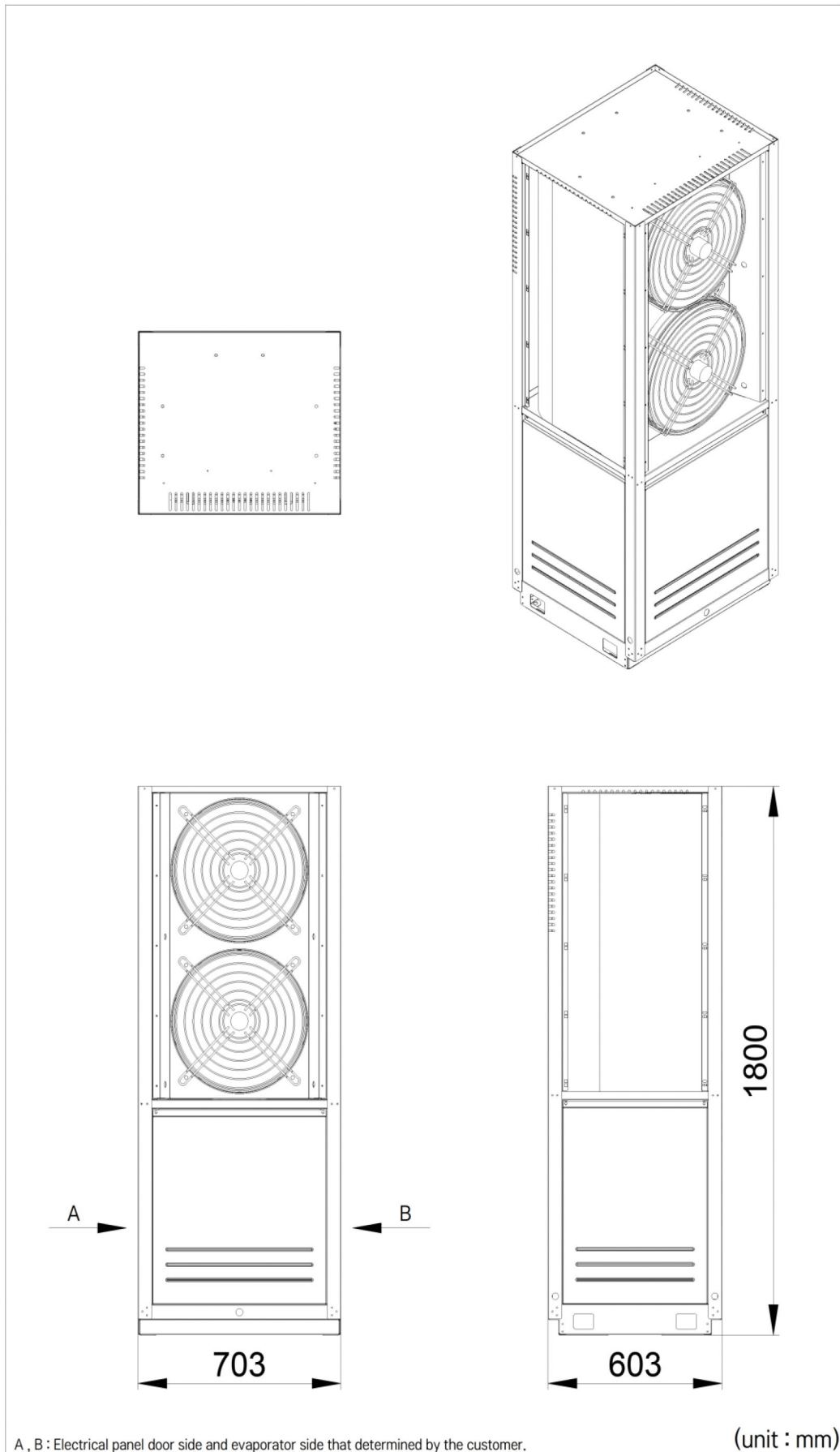


Model No.	Ambient Temp. (°C)	Cooling Capacity (KW)	Power Input (KW)	Rated Current (A)	COP
HTLSD04A1SC	30	10.9	3.43	8.0	3.18
	35	10.3	3.80	8.4	2.70
	37	10.0	3.96	8.6	2.53
	40	9.6	4.22	8.9	2.27
	42	9.3	4.40	9.2	2.12
	46	8.8	4.81	9.6	1.82
HTLSD05A1SC	30	13.5	4.13	9.5	3.26
	35	12.6	4.56	10.0	2.76
	37	12.2	4.74	10.2	2.58
	40	11.7	5.03	10.5	2.32
	42	11.3	5.24	10.8	2.16
	46	10.6	5.67	11.3	1.86
HTLSD06A1SC	30	16.0	4.68	9.8	3.41
	35	15.0	5.20	10.5	2.88
	37	14.6	5.42	10.9	2.69
	40	14.0	5.77	11.4	2.42
	42	13.6	6.01	11.8	2.26
	46	12.8	6.53	12.6	1.95
HTLSD08B2SC	30	21.8	7.0	14.6	3.12
	35	20.5	7.7	15.5	2.66
	37	20.0	8.0	15.8	2.49
	40	19.2	8.6	16.5	2.24
	42	18.6	8.9	16.9	2.09
	46	17.5	9.7	17.9	1.80
HTLSD10B2SC	30	26.9	8.4	17.6	3.21
	35	25.1	9.2	18.5	2.72
	37	24.4	9.6	19.0	2.54
	40	23.3	10.2	19.6	2.29
	42	22.6	10.6	20.1	2.13
	46	21.1	11.5	21.1	1.84
HTLSD12B2SC	30	31.9	9.5	18.2	3.36
	35	29.9	10.5	19.6	2.84
	37	29.1	11.0	20.3	2.66
	40	27.9	11.7	21.4	2.39
	42	27.1	12.1	22.1	2.23
	46	25.5	13.2	23.8	1.93

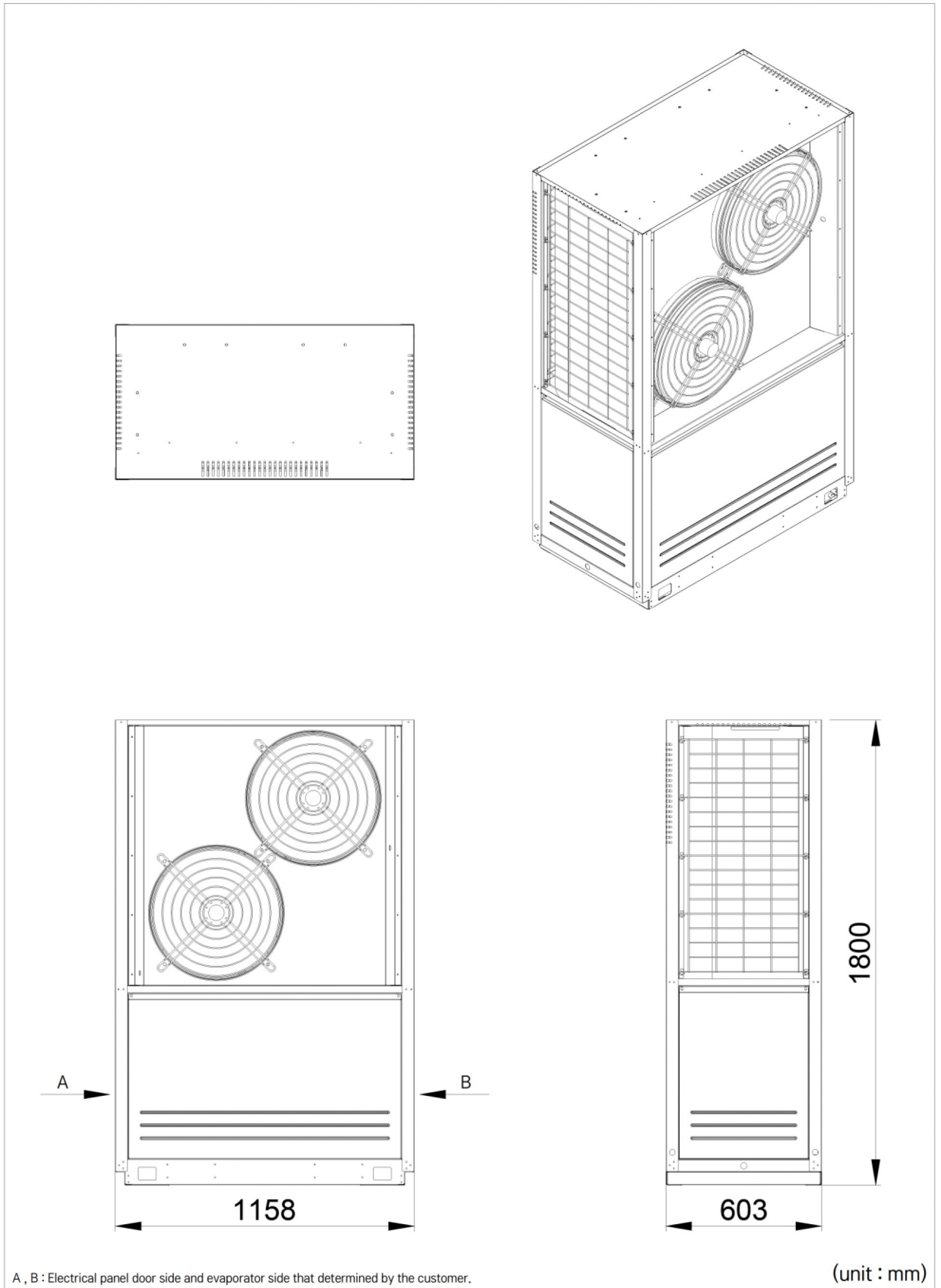
- Chilled water inlet / outlet : 12 °C / 7 °C



Dimensions



HTLSD08B2SC - HTLSD10B2SC - HTLSD12B2SC





بادبان تهویه پارسیان

دفتر مرکزی تهران

تهران . پاسداران . برج سفید . واحد ۸۰۴

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