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MONOBLOCK & PACKAGED REFRIGERATION UNITS

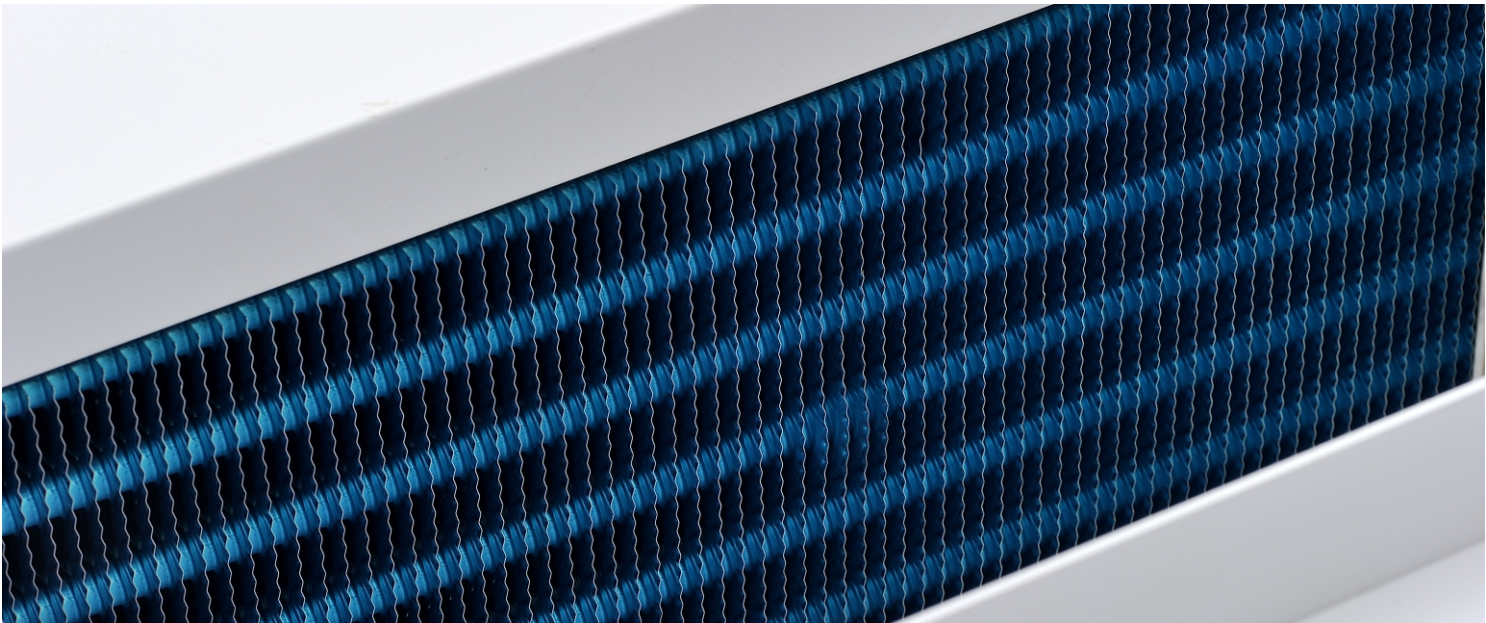
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Introduction



Boyard's monoblock packaged condensing systems are designed for commercial walk-in cooler and freezer cold rooms. Boyard offers both fixed and variable frequency units, with horsepower ranging from 1 to 3HP, catering to various cooling needs. The monoblock systems feature easy installation with a plug-and-play design, eliminating the need for welding or refrigerant charging. Throttling control is managed by an electronic expansion valve, and defrosting is handled by a four-way valve, with the defrosting scheme either scheduled or done as required. Boyard's monoblock packaged condensing systems provide efficient, reliable, and flexible cooling solutions for commercial applications. For specific requirements, Boyard customize the systems quickly to meet unique needs.



Features

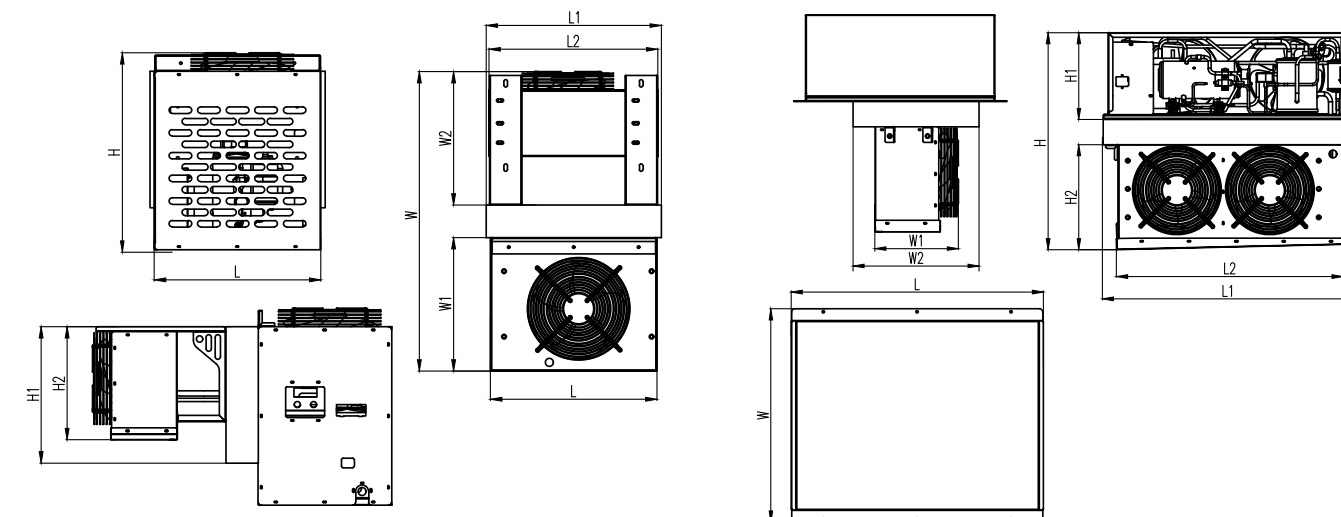
- The product line includes fixed-speed units and inverter-driven monoblock units, with horsepower ranging from 1 to 3 HP.
- The inverter monoblock units enable rapid cooling and precise temperature control of the cold storage within $\pm 0.5^{\circ}\text{C}$.
- Compatible with refrigerants including R290, R404A, R448A, R449A, and R454C.
- Operational within an evaporating temperature range of -40°C to $+5^{\circ}\text{C}$.
- Simple installation with plug-and-play functionality; no on-site welding or refrigerant charging required.
- Utilizes electronic expansion valves for throttling control.
- Employs a four-way valve for hot gas defrosting, with defrost modes selectable between timed defrost or on-demand defrost.
- Supports self-evaporation of condensate water.





Unit Appearance

The default thickness of cold storage panels is 80mm, which can be adjusted according to customer requirements.



Standard Configuration

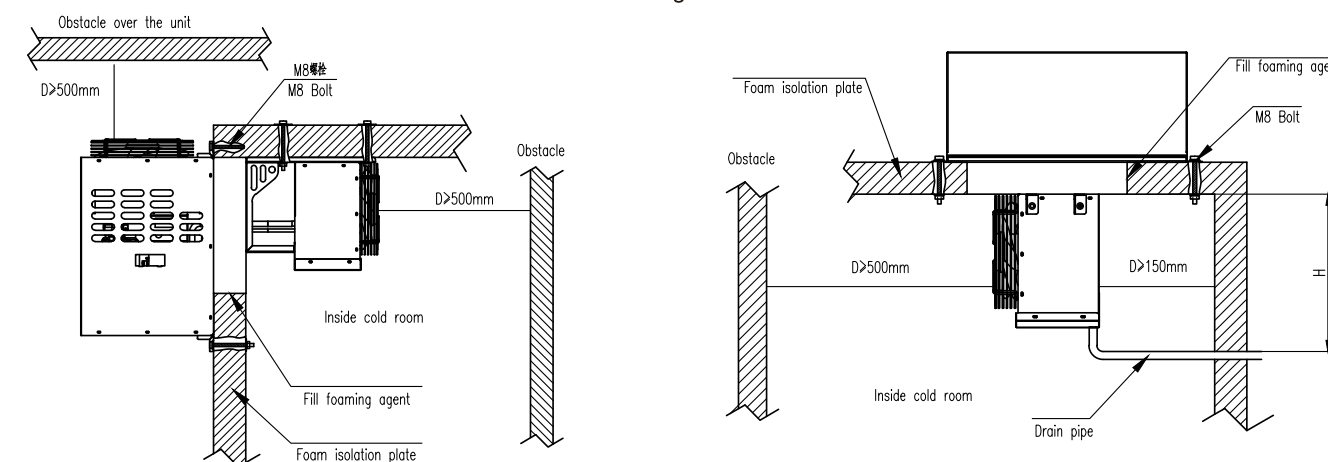
- Hermetic high-efficiency compressor
- Power supply specifications: 220–230V/1PH/50Hz/60Hz or 380–400V/3PH /50Hz
- Air-cooled condenser with axial fans
- Electronic control panel
- Electronic expansion valve or thermostatic expansion valve
- Liquid line filter
- Pressure-controlled condenser fan speed regulator
- 5-meter standard pre-wired harness

Personalization Options

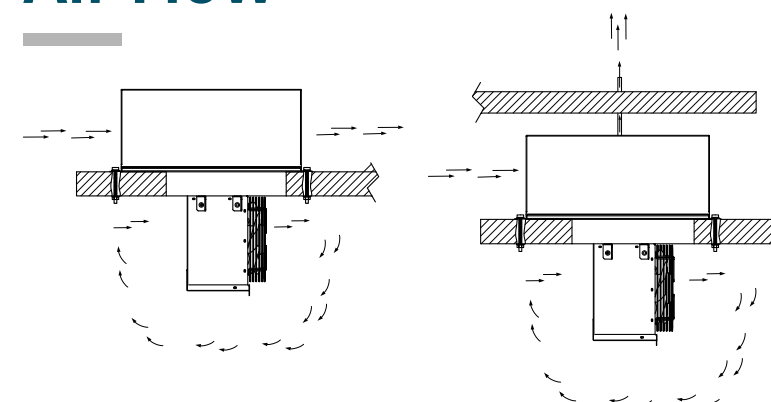
- Inverter compressor or fixed-speed compressor
- Oil separator
- Condensation method: Water-cooled (optional)
- Door microswitch connection cable
- Cold storage light and bulb assembly
- Heater cable for door switch (for low-temperature models)
- Condensate evaporation tray
- Visual and audible alarm
- Remote control panel (for single unit)
- Crankshaft heating belt

Installation

1. The thickness of the cold storage panels must not be less than 75mm.
2. The gap between the unit and the cold storage panels must be filled with foam agent.



Air Flow



The airflow of the Monoblock unit is composed of the flow from the condensing section and the evaporating section. If equipped with a centrifugal fan, the condensing part—thanks to the differently configured blades compared to the axial fan version—can direct the airflow through a duct toward a specific direction to prevent excessive heating of the surrounding environment.

Applications



Unit Details



Technical Data



Wall-Mounted Units

Model	BYGD-010-QHD-RZDP	BYGD-015-QHD-RZDP	BYGD-020-QHD-RZDP	BYGD-030-QHD-RZDP	BYGY-010-QXD-RZPP	BYGY-015-QXD-RZPP	BYGY-020-QXD-RZPP
Refrigerant	R404A / R448A / R449A / R454C / R455A				R290		
HP Compressor	1 HP	1.5 HP	2 HP	3 HP	1 HP	1.5 HP	2 HP
Power Supply	220-230V 50/60 Hz						
Evap.Temp [°C]	-40~-5°C						
Ambient Temp [°C]	-20~40°C						
Input Power [W]	1120	1465	2020	2610	750	1175	1410
Maximum Current [A]	6.2	10.5	13.5	16.5	5.5	7.5	9.5
Defrost	Hot gas defrost (compressor) with electric heating assist						
Cooling Capacity [W]	Te=-7°C, Tsuc=18°C, Ta=32°C	2195	2830	3680	5075	1840	2300
	Te=-25°C, Tsuc=5°C, Ta=32°C	1150	1500	1750	2485	900	1175
Applicable storage capacity [m³]	Working Temp +2°C	14	18	24	33.5	12	15
	Working Temp -18°C	5	9	12	20	6	7.5
Overall Dimensions	L*W*H (mm)	525*825*705		685*885*705	855*925*730	525*825*705	
Packaging Dimensions	L*W*H (mm)	640*880*855		800*940*855	970*980*885	640*880*855	

Top-Mounted Units



Model	BYGD-010-QHD-SZDP	BYGD-015-QHD-SZDP	BYGD-020-QHD-SZDP	BYGD-030-QHD-SZDP	BYGY-010-QXD-SZPP	BYGY-015-QXD-SZPP	BYGY-020-QXD-SZPP
Refrigerant	R404A / R448A / R449A / R454C / R455A				R290		
HP Compressor	1 HP	1.5 HP	2 HP	3 HP	1 HP	1.5 HP	2 HP
Power Supply	220-230V 50/60 Hz						
Evap.Temp [°C]	-40~-5°C						
Ambient Temp [°C]	-20~40°C						
Input Power [W]	1100	1425	1920	2530	740	1145	1310
Maximum Current [A]	6.2	10.5	13.5	16.5	5.5	7.5	9.5
Defrost	Hot gas defrost (compressor) with electric heating assist						
Cooling Capacity [W]	Te=-7°C, Tsuc=18°C, Ta=32°C	2195	2830	3680	5075	1840	2300
	Te=-25°C, Tsuc=5°C, Ta=32°C	1150	1500	1750	2485	900	1175
Applicable storage capacity [m³]	Working Temp +2°C	14	18	24	33.5	12	15
	Working Temp -18°C	5	9	12	20	6	7.5
Overall Dimensions	L*W*H (mm)	800*676*695		940*676*820	1350*676*820	800*676*695	
Packaging Dimensions	L*W*H (mm)	850*730*895		990*730*1020	1400*730*1020	640*880*855	

Specifications and Configurations

R404A/R448A/R449A/R454C MBP/LBP Variable Frequency Wall-Mounted Monoblock Unit

Model				BYGY-010-QXD-RZDP	BYGY-015-QXD-RZDP	BYGY-020-QXD-RZDP	BYGY-030-QXD-RZDP	
Nominal Input (W)				1120	1465	2020	2610	
Power Supply				220V 50/60 Hz				
Refrigerant				R404A / R448A / R449A / R454C / R455A				
Max Running Current (A)				6.2	10.5	13.5	16.5	
Evap.Temp (°C)				-40~-5°C				
Ambient Temp (°C)				-10~43°C				
Standard Configuration	Compressor (Model)			JXSD150Z312	KXSD203Z312	KXSD300Z312	KXSD300Z312	
	Condenser	Style		Copper tube fin condenser or microchannel condenser				
		Fam Motor	Diameter*Quantity(mm)	φ300*1	φ300*1	φ300*1	φ300*2	
			Air Flow (m3/hr)	1800/2000	1800/2000	1800/2000	3600/4000	
	Evaporator	Style		Copper tube fin evaporator				
		Fam Motor	Diameter*Quantity(mm)	φ250*1	φ300*1	φ300*1	φ300*2	
			Air Flow (m3/hr)	1100/1250	1800/2000	1800/2000	3600/4000	
	Pressure Controller (Mpa)			Diaphragm type high pressure switch		Low pressure sensor		
	Accumulator			/	650cc	1L		
	Reservoir			2L (Bidirectional)				
	Sight Glass			3/8" (φ9.52)				
	Oil Extractor			TDW-4808S		BLR/A-W 55833		
	Filter Drier			083S (Bidirectional)				
	Check Valve			SR-06				
	Electronic Expanding Valve			DPF(TS1)1.0		DPF(TS1)1.3	DPF(TS1)1.65	
	Liquid Injection Valve			1/4" (φ6.35)				
	Four-way Valve			SHF7		SHF9		
	Defrosting Heating Element			500W				
	Defrosting Heating Belt			25W/m, 3m				
	Electric Control	Temperature Controller			EK-3030V			
		AC Contactor			18/01			
Air Switch			2P NXB-63 D32					
Button Switch			Passive switch for unit operation (Function switches such as cold storage lamp and cold storage door heating wire can be added.)					
Variable Frequency Control			Compressor frequency control, Electronic expansion valve control, Condensing fan control, Evaporating fan control, Defrosting control, High and low pressure protection, Spray protection, Exhaust temperature protection, Current protection and Fault code output.					
Dimension (mm)	Length(mm)			525		685	855	
	Width(mm)			825		885	925	
	Height(mm)			705			730	
R404A Cooling Capacity (W)	Evap Temp(°C)			Ambient Temp:32°C Subcooling Temp:0°C				
	-40			590	840	990	1365	
	-35			720	1040	1260	1625	
	-30			910	1250	1480	2060	
	-25			1150	1500	1750	2485	
	-20			1410	1890	2250	3100	
	-15			1700	2240	2750	3550	
	-10			2000	2650	3300	4525	
-5			2320	2950	3930	5440		

R290 MBP/LBP Variable Frequency Wall-Mounted Monoblock Unit

Model				BYGY-010-QXD-RZPP	BYGY-015-QXD-RZPP	BYGY-020-QXD-RZPP	
Nominal Input (W)				750	1175	1410	
Power Supply				220V 50/60 Hz			
Refrigerant				R290			
Max Running Current (A)				5.5	7.5	9.5	
Evap.Temp (°C)				-40~-5°C			
Ambient Temp (°C)				-10~43°C			
Standard Configuration	Compressor (Model)			JXSP150Z220	KXSP203Z220	KXSP300Z220	
	Condenser	Style		Copper tube fin condenser or microchannel condenser			
		Fam Motor	Diameter*Quantity(mm)	φ300*1	φ300*1	φ350*1	
			Air Flow (m3/hr)	1800/2000	1800/2000	2500/2800	
	Evaporator	Style		Copper tube fin evaporator			
		Fam Motor	Diameter*Quantity(mm)	φ250*1	φ300*1	φ300*1	
			Air Flow (m3/hr)	1100/1250	1800/2000	1800/2000	
	Pressure Controller (Mpa)			Diaphragm type high pressure switch		Low pressure sensor	
	Accumulator			/	650cc		
	Sight Glass			3/8" (φ9.52)			
	Oil Extractor			TDW-4808S		BLR/A-W 55833	
	Filter Drier			083S (Bidirectional)			
	Check Valve			SR-06			
	Electronic Expanding Valve			DPF(TS1)1.0		DPF(TS1)1.3	
	Liquid Injection Valve			1/4" (φ6.35)			
	Four-way Valve			SHF7			
	Defrosting Heating Element			500W			
	Defrosting Heating Belt			25W/m, 3m			
	Electric Control	Temperature Controller			EK-3030V		
		AC Contactor			18/01		
Air Switch			2P NXB-63 D32				
Button Switch			Passive switch for unit operation (Function switches such as cold storage lamp and cold storage door heating wire can be added.)				
Variable Frequency Control			Compressor frequency control, Electronic expansion valve control, Condensing fan control, Evaporating fan control, Defrosting control, High and low pressure protection, Spray protection, Exhaust temperature protection, Current protection and Fault code output.				
Dimension (mm)	Length(mm)			525		685	
	Width(mm)			825		885	
	Height(mm)			705			
Cooling Capacity (W)	Evap Temp(°C)			Ambient Temp:32°C Subcooling Temp:0°C			
	-40			500	710	865	
	-35			630	855	990	
	-30			755	980	1190	
	-25			900	1175	1350	
	-20			1045	1510	1755	
	-15			1400	1850	2160	
	-10			1750	2150	2520	
	-5			1900	2400	2790	

R404A/R448A/R449A/R454C MBP/LBP Variable Frequency
Top-Mounted Monoblock Unit

Model				BYGD-010-QHD-SZDP	BYGD-015-QHD-SZDP	BYGD-020-QHD-SZDP	BYGD-030-QHD-SZDP	
Nominal Input (W)				1100	1425	1920	2530	
Power Supply				220V 50/60 Hz				
Refrigerant				R404A / R448A / R449A / R454C / R455A				
Max Running Current (A)				6.2	10.5	13.5	16.5	
Evap.Temp (°C)				-40~-5°C				
Ambient Temp (°C)				5~43°C				
Standard Configuration	Compressor (Model)			JHSD150Z312	KHSD203Z312	KHSD300Z312	KHSD300Z312	
	Condenser	Style		Copper tube fin condenser or microchannel condenser				
		Fam Motor	Diameter*Quantity(mm)	φ230*2(EC)	φ230*2(EC)	φ230*3(EC)	φ230*4(EC)	
			Air Flow (m3/hr)	730*2/750*2	730*2/750*2	730*3/750*3	730*4/750*4	
	Evaporator	Style		Copper tube fin evaporator				
		Fam Motor	Diameter*Quantity(mm)	φ250*1	φ250*1	φ300*1	φ300*2	
			Air Flow (m3/hr)	1100/1250	1100/2000	1800/2000	3600/4000	
	Pressure Controller (Mpa)			Diaphragm type high pressure switch		Low pressure sensor		
	Oil Extractor			TDW-4808S	BLR/A-W 55833			
	Accumulator			650cc		1L		
	Reservoir			1.1L (Bidirectional)			2L (Bidirectional)	
	Sight Glass			3/8" (φ9.52)				
	Filter Drier			083S (Bidirectional)				
	Check Valve			SR-06				
	Electronic Expanding Valve			DPF(TS1)1.0		DPF(TS1)1.3	DPF(TS1)1.65	
	Liquid Injection Valve			1/4" (φ6.35)				
	Four-way Valve			SHF7		SHF9		
	Defrosting Heating Element			500W				
	Defrosting Heating Belt			25W/m, 3m				
	Electric Control	Temperature Controller			EK-3030V			
		AC Contactor			18/01			
Air Switch			2P NXB-63 D32					
Button Switch			Passive switch for unit operation (Function switches such as cold storage lamp and cold storage door heating wire can be added.)					
Variable Frequency Control			Compressor frequency control, Electronic expansion valve control, Condensing fan control, Evaporating fan control, Defrosting control, High and low pressure protection, Spray protection, Exhaust temperature protection, Current protection and Fault code output.					
Dimension (mm)	Length(mm)			800		940	1350	
	Width(mm)			676				
	Height(mm)			695		820		
R404A Cooling Capacity (W)	Evap Temp(°C)			Ambient Temp:32°C Subcooling Temp:0°C				
	-40			590	840	990	1365	
	-35			720	1040	1260	1625	
	-30			910	1250	1480	2060	
	-25			1150	1500	1750	2485	
	-20			1410	1890	2250	3100	
	-15			1700	2240	2750	3550	
	-10			2000	2650	3300	4525	
-5			2320	2950	3930	5440		

R290 MBP/LBP Variable Frequency
Top-Mounted Monoblock Unit

Model				BYGD-010-QHD-SZPP	BYGD-015-QHD-SZPP	BYGD-020-QHD-SZPP	
Nominal Input (W)				740	1145	1310	
Power Supply				220V 50/60 Hz			
Refrigerant				R290			
Max Running Current (A)				5.5	7.5	9.5	
Evap.Temp (°C)				-40~-5°C			
Ambient Temp (°C)				5~43°C			
Standard Configuration	Compressor (Model)			JHSP150Z220	KHSP203Z220	KHSP300Z220	
	Condenser	Style		Copper tube fin condenser or microchannel condenser			
		Fam Motor	Diameter*Quantity(mm)	φ230*2(EC)	φ230*2(EC)	φ230*3(EC)	
			Air Flow (m3/hr)	730*3/750*2	730*3/750*2	730*3/750*3	
	Evaporator	Style		Copper tube fin evaporator			
		Fam Motor	Diameter*Quantity(mm)	φ250*1	φ250*1	φ300*1	
			Air Flow (m3/hr)	1100/1250	1100/1250	1800/2000	
	Pressure Controller (Mpa)			Diaphragm type high pressure switch		Low pressure sensor	
	Oil Extractor			TDW-4808S	BLR/A-W 55833		
	Accumulator			650cc			
	Sight Glass			3/8" (φ9.52)			
	Filter Drier			083S (Bidirectional)			
	Check Valve			SR-06			
	Electronic Expanding Valve			DPF(TS1)1.0		DPF(TS1)1.3	
	Liquid Injection Valve			1/4" (φ6.35)			
	Four-way Valve			SHF7			
	Defrosting Heating Element			500W			
	Defrosting Heating Belt			25W/m, 3m			
	Electric Control	Temperature Controller			EK-3030V		
		AC Contactor			18/01		
Air Switch			2P NXB-63 D32				
Button Switch			Passive switch for unit operation (Function switches such as cold storage lamp and cold storage door heating wire can be added.)				
Variable Frequency Control			Compressor frequency control, Electronic expansion valve control, Condensing fan control, Evaporating fan control, Defrosting control, High and low pressure protection, Spray protection, Exhaust temperature protection, Current protection and Fault code output.				
Dimension (mm)	Length(mm)			800		940	
	Width(mm)			676			
	Height(mm)			695	705	820	
Cooling Capacity (W)	Evap Temp(°C)			Ambient Temp:32°C Subcooling Temp:0°C			
	-40			500	710	865	
	-35			630	855	990	
	-30			755	980	1190	
	-25			900	1175	1350	
	-20			1045	1510	1755	
	-15			1400	1850	2160	
	-10			1750	2150	2520	
	-5			1900	2400	2790	