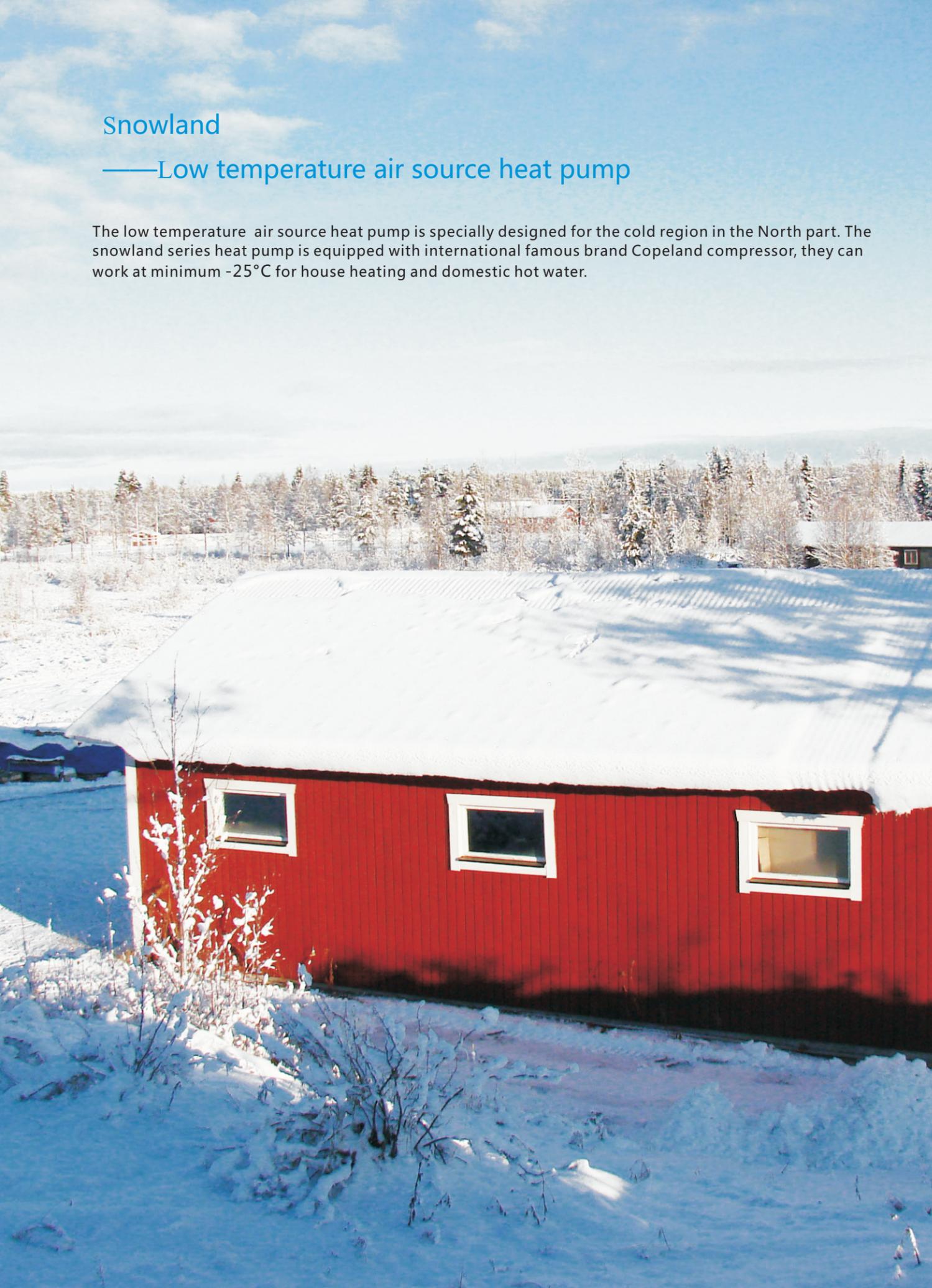


Snowland

—Low temperature air source heat pump

The low temperature air source heat pump is specially designed for the cold region in the North part. The snowland series heat pump is equipped with international famous brand Copeland compressor, they can work at minimum -25°C for house heating and domestic hot water.



		Air to water heat pump (Snowland series)				
Model		ESDAW-10SH/S	ESDAW-12SH/S	ESDAW-18SH/S	ESDAW-20SH/S	
Specification	Heating capacity *	KW	10	11.6	17.2	18.5
	Heating power input *	KW	2.8	3.3	4.9	5.3
	Heating capacity **	KW	8	9.4	14	15.8
	Heating power input **	KW	2.6	3	4.5	5.1
	Heating capacity ***	KW	5.5	6.4	9.7	11
	Heating power input ***	KW	2.5	2.9	4.4	5
	COP*		3.57	3.52	3.51	3.49
	COP**		3.08	3.13	3.11	3.10
	COP***		2.20	2.21	2.20	2.20
	Max. water temperature	°C			60	
	Rated water temperature	°C			55	
	Water flow	m ³ /h	1.72	1.99	2.96	3.18
	Water pressure drop	Kpa	22	24	28	30
	Net weight	kg	100	110	150	185
	Gross weight	kg	115	125	165	205
	Noise	dB(A)	52	52	55	58
Water connections	Inch	1				
Power supply		220V/1PH/50Hz		380V/3PH/50Hz		
Net dimensions	mm	880*360*800	930*390*1270	1360*600*1280		
Packing dimensions	mm	920*400*930	970*430*1400	1390*610*1410		
Net dimensions	mm		455*185*655			
Packing dimensions	mm		475*235*705			
Standard components	Compressor	Brand	Copeland (EVI)			
		Quantity	1			
	Condenser	Plate heat exchanger				
	Evaporator	Hydrophilic aluminum foil + internal thread copper pipe				
	Economizer	Plate heat exchanger				
	4-way valve	Chunhui or Dunan				
	Expansion valve	Sanhua electronic expansion valve				
	AC contactor	Shihlin		LG		
	Fan motor		90W		90W*2	
	Cabinet	Galvanized white metal sheet				
	Controller	Chinese brand large LCD screen controller				
	High pressure switch	3.0/2.4MPa				
	Low pressure switch	0.02/0.15MPa				
	Working mode	Heating only				
Refrigerant	R407C					
Circulation pump		WILO RS25/8		No		
Remarks	1. Unit working temperature : -25°C to 43°C 2. *Test condition: ambient temp: 7°C/6°C, water inlet/outlet: 40°C/45°C ** Test condition: ambient temp: -2°C, water inlet/outlet: 40°C/45°C *** Test condition: ambient temp: -15°C, water inlet/outlet: 40°C/45°C 3. Copeland compressor for low temperature condition 4. The above is the basic configuration. Water pump is not included in. 5. The above price is based on FOB Guangzhou. 6. The above price is calculated based on the current exchange rate, if the exchange rate fluctuation is over 0.5%, the price will be adjusted accordingly. 7. Payment term: 30% TT in advance, the rest is balanced before the shipment. 8. Delivery time: It depends on the condition of the material inventory, usually 10-30 working days.					

How does the conventional air source heat pump work?

The heat from the sun is stored in the air year after year so that we can get a large of free renewable energy constantly from the nature.

The stored energy is the ideal heat source for your daily heating demand.

The air source heat pump absorbs heat from the solar energy in the air. The heat is collected and transferred to be high grade heat to be released to heat house or domestic hot water by underfloor heating system or radiator.

The solar energy stored in the air is absorbed into the heat pump system by a heat exchanger (evaporator). In the evaporator, the refrigerant absorbs the solar energy and turns into gas at very low temperature.

The gas refrigerant is compressed by compressor and turns into hot and high pressure gas, then transfers heat to the water which will be used for house heating .

Then the refrigerant coverts into low pressure liquid and is ready to absorb heat for the next cycle.



When the ambient temperature is very low, what will happen ?

When the conventional scroll compressor operates at the low evaporating temperature, the suction specific volume will increase, the pressure ratio will increase and the discharge temperature will raise quickly. All of those will cause the sharp decrease of the compressor performance, the insufficient heating and the hard operation of the compressor. In this case, the air source heat pump has great increasing power consumption but quick decreasing of the heating capacity, so the heat pump is unable to increase the water temperature effectively .

The effective working temperature of the air source heat pump is only **-5°C!**

To solve the above problem, the supplier of the scroll compressor developed the Enhanced Vapour Injection(EVI) compressor, which means the medium pressure vapour is injected into the intermediate vapour injection port in order to increase the discharge volume, decrease the discharge temperature and improve the heating capacity, so that the heat pump can provide sufficient heat capacity even at the low ambient temperature. Meanwhile, the open and close of the vapour filling channel is applied as a supplementary means to unload or adjust the capacity.

The low temperature air source heat pump can normally work at **-25°C**

Product Features

Low temperature ASHP



Conventional ASHP

Super Wide working temp range:
Heating : ambient temp -25°C~21°C
Cooling : ambient temp 21°C~43°C
It gives you comfortable experience all the year around no matter where you are.

Limited working temp range:
Heating : ambient temp -5°C~21°C , when the ambient is low than -5°C , the heat capacity will greatly decay, the working capacity of the compressor decreases and is unable to provide hot water normally.

Super high water temperature:
Outlet water temp. 65°C
The hot water temp can get up to 50°C even in cold winter.

When the air temp decreases a lot in winter, the capacity of the heat pump decreases and is unable to heat up water effectively.

Super high EER
The EER can get to 3.8 (based on the internal standards test condition)
The cooling efficiency can also get to 3.1

The EER in winter is only around 1.5, the power consumption increases but the heat capacity greatly decreases.

Split design, safe and reliable
The unit is designed as split type. The outside unit is with compressor and evaporator etc., and the indoor unit is with water heat exchanger etc. in order to protect the water circuit from frosting in winter.

The condenser is put inside the main unit, when the air temp is low in winter, it is easy to be frozen and so causes the damage on the system.