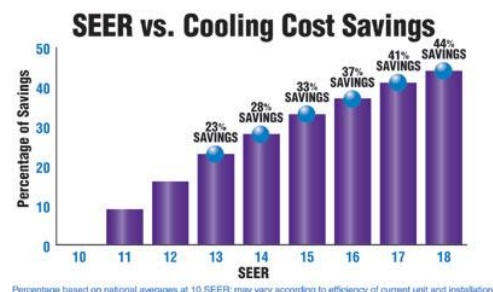


# Free Cool Cassette type Solar Hybrid Air Conditioning FCH (R)-3120 QW

## Features: Revolutionary technology

- Free Cool solar hybrid air-conditioner at an economically competitive level could reduce Electricity costs by 30% up to 60%. (Depending on sunshine and temperature)
- This would cut the growth of peak electric demand and ease the increasing Pressures on generating capacity, transmission, and distribution. the SEER exceed to 6.1, all of the solar air conditioner is A++ or A+++.
- Healthy and comfortable, constant temperature and keeping air conditioner disease away. Automatic open and close dustproof air outlet.
- We use a high efficient compact smaller compressor instead of standard compressors to run our system .Mult-fold heat exchanger and works together with our solar collector to saving electricity subsequently internal thread copper pipe and hydrophilic copper coil make the cooling stronger..
- Free Cool With strong adaptability, our hybrid solar air conditioner can run at super low and high temperature from -7 to 63 centigrade.
- Exceeding the national standards and applicable to all kinds of environment.
- Free cool solar hybrid air conditioner have the humidification function, people will not feel thirsty in the room.



- Anti-dust air filter makes air fresher.
- Digital e-Touch, convenient and electricity-saving, easier operation for elder people and kids.
- Fluorescent button, visible at night.
- Intelligent Defrosting Systems.
- The Free Cool hybrid solar air-conditioner also can operate with efficiency at night or on cloudy days



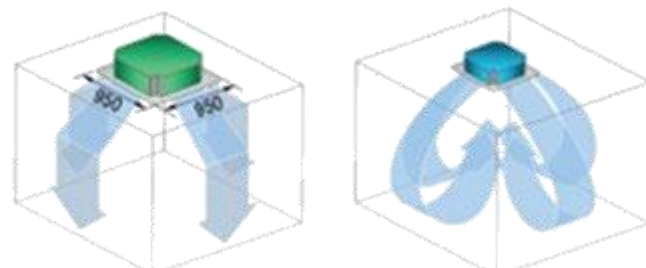
## Solar Air Conditioner

A kind of Solar Air Conditioner, no need the solar panel and battery, but saving 30% up to 60% electricity. But its price is much cheaper than the solar air conditioner with solar panel and battery.



## Specification for Cassette type:

36000Btu, 41000Btu and 48000Btu  
Choice for function: cooling only or cooling & heating  
Choice for power supply: 220V/50HZ or 220V/60HZ  
Solar collector: vacuum tube  
Refrigerant: ecofriendly gas R410A



## Why Free Cool hybrid solar air conditioner can save electricity?

It absorbs solar energy to heat the inside medium by using a vacuum solar collector. The refrigeration from the compressor goes through the copper coil inside the collector and undertakes a heat exchange. The refrigeration exchanges heat with the medium inside the solar collector will go through a cycle inside the system for cooling and heating.

Secondly, it adopts a highly efficient heat-exchange system. The use of the internal thread pipe, hydrophilic aluminum fin and the optimal heat exchange system reduce energy loss, improve the overall efficiency and effectively ensure the performance. Therefore, Free Cool hybrid solar air conditioner is more convenient and energy-saving than regular air conditioner.



Free Cool solar air conditioner for echo friendly and save the earth and money



## Cassette Hybrid Solar Air Conditioner

### Technical Parameter:

Model		FCF(R)-3120QW		
<b>Performance Parameter</b>				
Capacity	Cooling	Btu/h	48000	
		W	14000	
	Heating	Btu/h	55000+1700	
		W	16000+500	
Noise	Indoor Type	dB(A)	≤50	
	Outdoor Type	dB(A)	≤60	
Air Circulation		m <sup>3</sup> /h	1900	
Suitable Area		m <sup>2</sup>	58~93	
EER			W/W	3.87
			Btu/h/w	13.2
<b>Power Consumption</b>				
Power Input	Cooling	W	3500~3740	
	Heating	W	3500~3760+500	
Rated Current	Cooling	A	15.91~17	
	Heating	A	15.91~17.09+22	
Vacuum Tube	Diameter*Length*Quantity		47mm*1200mm*13	
<b>Volume</b>				
Indoor Type	N. W.	mm	850*850*280	
	Shipping	mm	890*880*320	
Panel	N. W.	mm	960*960*60	
	Shipping	mm	1010*1010*110	
Outdoor Type	N. W.	mm	950*360*1255	
	Shipping	mm	1140*460*1340	
Water Tank	Shipping	mm	1120*400*400	
Vacuum Tube	Shipping	mm	1270*280*210	
<b>Weight</b>				
Indoor Type	N. W. /G. W.	kg	53/57	
Outdoor Type	N. W. /G. W.	kg	97/102	
Solar Collector	N. W. /G. W.	kg	23/26	



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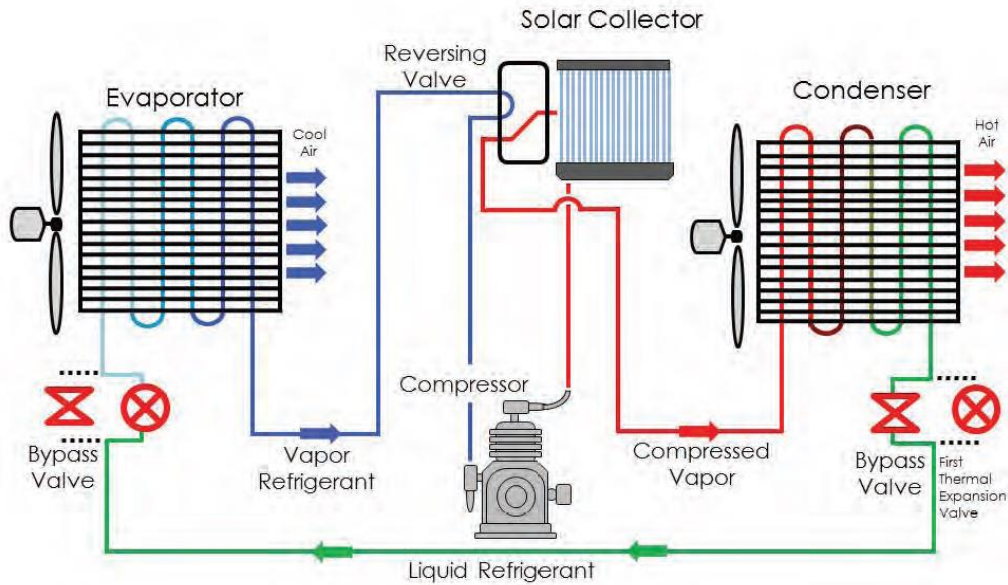
The Free Cool Solar Air Conditioner have integrated electro mechanical system utilizes the sun as an additional heat source to assist the energy needed to drive the cooling process of a typical air conditioning system which in turn reduces the electrical consumption required to run the compressor.

The Solar Air Conditioning System is similar to a regular A/C in that the refrigeration takes place by evaporating liquid with a very low boiling point. In both cases, when a liquid evaporates or boils, it takes some heat away with it, and can continue to do so either until the liquid is all boiled, or until everything has become so cold that the sub-zero boiling point has been reached.

The difference between the two is how the gas is changed back into a liquid so that it may be used again. A regular air conditioning system uses a compressor to increase the pressure on the gas, forcing it to become a liquid again through the use of the condenser coil. The change of state of the refrigerant, starts to take place approximately 2/3rd's of the way down the condenser. The Solar Air Conditioning System uses a different method. It uses the solar heat from the sun to superheat the refrigerant which enables the refrigerant to begin changing state at the top 2/3rd's of the condenser coil. By using this method it reduces the superheat of compression required to achieve the cooling process in the conventional cooling systems as well as utilizing more of the condenser cooling face of the coil. The conventional air conditioning system is only able to change a portion of the gas into a liquid state so as when the refrigerant enters into the metering device it is a saturated vapor. The Free Cool Solar A/C process allows more of the refrigerant to change state back into a liquid faster as well as allowing the transformation of more liquid into the metering device. While the high temperature and high pressure refrigerant steam coming out from the compressor passes the Solar panel collector, by absorbed solar power, the temperature will further increase from roughly 75°C to 85°C. The super-heated cooling gas would largely improve the cooling effect when cooling exothermic into liquid in condenser.

For the purpose of better utilizing the heat gotten from solar power while reducing the electricity consumption, the condenser and evaporator have been specially designed to match the compressor by significantly increasing heat exchanging surfaces, much larger than those of regular Air Conditioner. In addition, by adopting state of the art controlling module, the whole Solar Air Conditioner System would work in the most efficient way, along with other factors, making the system achieve super high Energy Efficiency Ratio (EER) will be more.





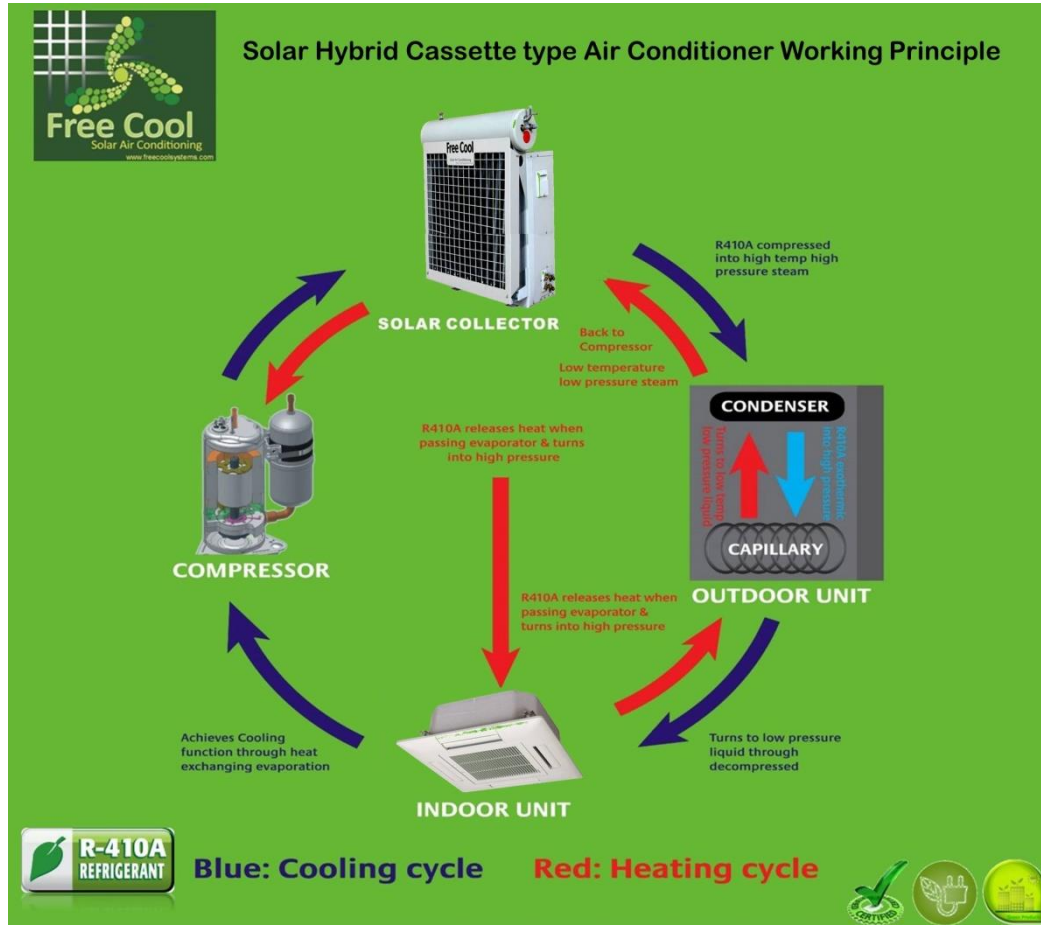
THE OUTDOOR SECTION OF THE A/C UNIT CONTAINS A COMPRESSOR WHICH USES THE MOST ELECTRICITY OF THE WHOLE SYSTEM



1- Stage Compressor and condenser coil.

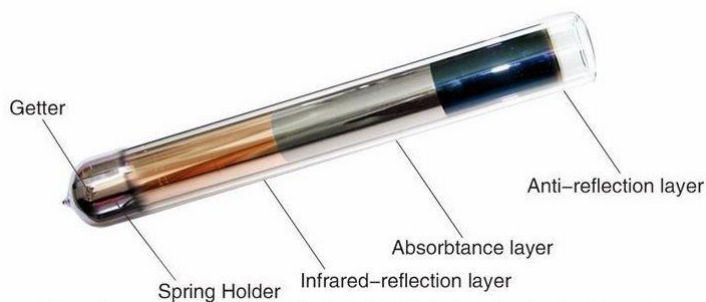


2-Stage Compressor, Solar Vacuum Tube and copper coil Stay In 1st Stage Longer and Operate Between low Amps.



## FEATURES

High efficiency all glass evacuated tube is the key component of solar collector. The evacuated tube is similar to a conventional Dewar flask and consists of two borosilicate glass tubes. This glass material has high chemical and thermal shock resistance. The outer surface of inner tube is coated with a sputtered solar selective material. This coated inner tube is closed at one end and sealed at the other end to the outer tube. The annular space between inner tube and outer tube is evacuated to virtually eliminate heat loss by conduction and convection. Free Cool Solar vacuum tubes



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