



**F.W.E CoolSolar Series – AC  
Ductless Single Zone Mini-Split Air Conditioner**

**Key Features:**

- EER of 3.8 - 4.2
- Accelerated ROI
- R-410A Refrigerant
- Three Models Available
  - Split
  - Ceiling Cassette
  - Cabinet
- Wall Mount
- Toshiba Compressor
- 11000 to 48000 BTU
- Super Quiet Operation
- 110 to 220VAC Available

**Solar Assisted Air Conditioning**

Residential and small commercial A/C units often make up 70% of the electrical power consumption of a building. Future World Energy's new CoolSolar A/C systems cover up to 30% to 45% of this demand by using a solar panel which is mounted next to the outdoor unit or on the roof of the building.

**Working principle of FWE CoolSolar Series**

The CoolSolar System utilizes the sun as a 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.

CoolSolar 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. CoolSolar 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. Conventional air conditioning systems are only able to change a portion of the gas into a liquid state so when the refrigerant enters into the metering device it is a saturated vapor. The 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.

The CoolSolar A/C could save about 30-45% electricity for cooling and more than 50% for heating.

Tech parameter for R410-A CoolSolar Series						
			FWE-32GW	FWE-35GW	FWE-37GW	FWE- 52GW
Power Supply			220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz
Capacity	Cooling	Btu/h	<b>11000</b>	<b>12000</b>	<b>13000</b>	<b>18000</b>
		W	3200	3500	3700	5200
	Heating	Btu/h	12000	13000	14500	19000
		W	3500	3800	4200	5700
Noise	Indoor	db(A)	<40	<40	<40	<48
	Outdoor	db(A)	<50	<50	<50	<56
Air Circulation		m <sup>3</sup> /h	540	720	720	≥1000
Suitable Area		m <sup>2</sup>	15~20	15~25	15~28	25~35
EER		w/w	3.76	3.8	3.81	3.85
cop		w/w	4.07	4.09	4.29	4.13
Input power	Cooling	W	850	920	970	1350
	Heating	W	860	930	980	1380
Rated Current	Cooling	A	3.86	4.18	4.41	6.13
	Heating	A	3.91	4.23	4.45	6.27
Size Indoor Unit	Net	mm	1010*325*200	1010*325*200	1010*325*200	1090*325*220
	Shipping	mm	1065*375*255	1065*375*255	1065*375*255	1170*395*300
Size Outdoor Unit	Net	mm	830*260*520	930*330*600	920*355*600	920*375*730
	Shipping	mm	890*360*590	995*390*650	995*390*650	1025*395*890
Weight of Indoor unit	Net/shipping	kg	15/18.5	15/18.5	15/18.5	18/22
Weight Outdoor unit	Net/shipping	kg	42/46	51/56	51/56	61/66
Size Solar Panel	Net/shipping	mm	1000*550*87	1000*550*87	1000*550*87	1000*550*87
Weight Solar Panel	Net/shipping	kg	14/16	14/16	14/16	14/16



Tech parameter for R410-A CoolSolar Series						
			FWE -72GW	FWE- 100GW	FWE-120GW	FWE-140GW
Power Supply			220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz
Capacity	Cooling	Btu/h	<b>24000</b>	<b>36000</b>	<b>41000</b>	<b>48000</b>
		W	7200	10000	12000	14000
	Heating	Btu/h	26000	38000	48000	55000
		W	7900	12000	14000	16000
Noise	Indoor	db(A)	<50	≤55	≤55	≤55
	Outdoor	db(A)	<58	≤65	≤65	≤65
Air Circulation		m³/h	1400	1700	1800	1900
Suitable Area		m²	30-50	45-60	45-70	60-85
EER		w/w	3.81	3.7	3.75	3.83
cop		w/w	4.14	4.28	4.24	4.32
Input power	Cooling	W	1890	2700	3200	3650
	Heating	W	1910	2800	3300	3700
Rated Current	Cooling	A	8.59	12.27	14.54	16.59
	Heating	A	8.68	11.273	15	16.82
Size Indoor Unit	Net	mm	1650*370*260	1650*370*260	1650*370*260	1650*370*260
	Shipping	mm	1720*440*320	1720*440*320	1720*440*320	1720*440*320
Size Outdoor Unit	Net	mm	1000*410*960	980*370*1325	980*370*1325	980*370*1325
	Shipping	mm	1085*435*1060	1085*435*1430	1085*435*1430	1085*435*1430
Weight of Indoor unit	Net/shipping	kg	32/36	34/38	40/45	42/47
Weight Outdoor unit	Net/shipping	kg	91/98	118/126	125/133	130/138
Size Solar Panel	Net/shipping	mm	1000*550*87	1000*550*87	1000*550*87	1000*550*87
Weight Solar Panel	Net/shipping	kg	14/16	14/16	14/16	14/16



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