



# THERMOSIPHONIC Solar Hot Water System

## Environmentally-friendly ECO STAR solar water heaters

### How does it work?

This unit works on the natural principal of thermosiphonic action, that is to say, as a liquid is heated, it rises. A water-based heat-transfer fluid inside the solar collectors is heated by the sun and flows up into a heat exchange jacket that surrounds the storage cylinder. The heat from this fluid is transferred through the wall of the jacket, heating the potable water inside the storage cylinder where it is ready for use. After transferring the heat, the cooled liquid flows to the bottom of the solar collectors for heating again.

*Your eco-friendly partner*



*An indirect, unvented, pressurized water heater designed to operate on solar energy with an electric backup booster element as an auxiliary heat source.*

**ECO STAR** solar water heaters are manufactured to the highest quality standards, giving outstanding performance, and by economizing on power usage, better for the environment.

Model	Tank			Collector					Support base	Overall Weight	
	Dimensions	Weight	Test Pressure	Dimensions	Collectors	Collector Surface	Weight	Tested Pressure	Weight	Empty	Full
EST	mm	Kg	bar	mm		m <sup>2</sup>	Kg	bar	Kg	Kg	Kg
120	500 x 1058	49	15	1960 x 960 x 80	1	1.88	32.5	10	28	109.5	225.5
150	500 x 1330	60	15	1960 x 960 x 80	1	1.88	32.5	10	28	120.5	264.5
200	580 x 1330	70	15	1960 x 960 x 80	1	1.88	32.5	10	28	130.5	329.5
250	580 x 1565	84	15	1960 x 960 x 80	2	3.76	65	10	30	179	421
300	580 x 1805	102	15	1960 x 960 x 80	2	3.76	65	10	30	197	492
500	750 x 1737	132	15	1960 x 960 x 80	3	5.64	97.5	10	32	261.5	763.5

**ECO STAR** solar hot water systems significantly reduce the use of electrical energy and save you money.

*Save energy cost while reducing the environmental impact*



## Specification of Storage Tank

<b>Range</b>	<b>120L to 500L</b>
Type	Double Jacket - Closed Circuit
Tank Cover material	Pre Painted galvanized steel sheet. Metal Steel sheet DC for the main tank (EN 10130/2006) Cylinder made from low carbon steel 2.5mm
Inner tank	DKP metal sheet: 2,5mm for the main body, 1,5mm for the closed circulation mantle
Inner tank enameling	Liquid enamel (DIN 4753-3) totally safe for public health (DIN 51032 & EN 1388-2)
Enamel Layer	Single "Direct" Layer
Enamel Specifications	Certified by WRAS , Cure for 6 minutes@840°C, Temperature Shock Test 200 °C for 5 times
Enameled Glass Thick ness	According to DIN 4753-3 : 3mm
Insulation Material	Fixed Rigid Polyurethane foam of 48kg/m3 (DIN 53420) thickness 50mm, self-extinguishing (DIN 4102)
Insulation Thickness	50mm
Tank Max working Pressure	10 bar
Exchanger jacketed around	3,3bar
Magnesium Rod	Standard in all our tanks. Protect against Corrosion
Power Backup Source	Electrical Resistance 2.0 KW for 200L and 3.5 kW for 300L
Thermostat power	20A / 60 or 115 Watt, Single phase

## Specification of Solar Collector

TECHNICAL FEATURES	UNIT	COLLECTOR'S TECHNICAL STANDARDS H81			
		H81 - 12	H81 - 15	H81 - 20	H81 - 25
<b>TYPE</b>					
Outer dimensions (height x width x thickness)	mm	1250 X 960 X 80	1455 X 960 X 80	1960 X 960 X 80	1960 X 1210 X 80
Total surface	m <sup>2</sup>	1.20	1.40	1.88	2.38
Window surface	m <sup>2</sup>	1.15	1.35	1.83	2.33
Absorption coating	m <sup>2</sup>	1.15	1.35	1.83	2.33
Absorption capacity	L	1.1	1.3	1.6	1.9
Frame / Thickness	mm	Pre-painted galvanized steel sheet 0.5mm			
Glass panel		Tempered			
Thermal insulation (shoulders) Thickness/Density	mm / Kg / m3	Stone wool / 30 / 50 A material properly designed for collectors, chemically inert, its qualities remain unchanged over time and it does not allow parasites to evolve			
Absorber		Harp-shaped bronze frame, selective coating on a panel (Full face) laser welding			
Absorption capacity	%	95			
Transmission	%	5			
Header Cu Φ/ Thickness	mm	22 / 0.7			
Riser CuΦ / Thickness	mm	8 / 0.40			
Risers	Pcs	8	10	10	11
Cu welding Φ22		4 or 2			
Maximum operating pressure	Bar	10			
Means of heat transmittal		Mixture of water and anti-freeze (mono-propylene-glycol)			
Layout		Vertical			
Weight (dry & Packaged)	Kg	21.5	24.5	32.5	40.5



**ECO STAR** Engineering Equipment Trading LLC  
P.O.Box 52223, Dubai, United Arab Emirates  
Phone : +971-4 331 6344 | Email: info@ecostar.ae  
Website : www.ecostar.ae

