

MANUFACTURING  
SINCE  
1981

# ECO DOMESTIC HOT WATER

CERTIFIED PRODUCT  
REFRIGERANT R513A  
**MOS**  
CERTIFIED



LATEST GENERATION OF  
SOLAR TECHNOLOGY.  
WORKS WITH SUN,  
WIND, RAIN OR  
EVEN AT NIGHT.



# EFFICIENCY & QUALITY

IN DOMESTIC  
HOT WATER  
PRODUCTION

 PORTUGUESE MANUFACTURING

SAVING  
**85%**  
UP TO

MAXIMUM  
RETURN ON  
INVESTMENT

- Stainless steel cylinder
- High level of efficiency and ecology
- Quiet operation
- Easy installation
- Smart photovoltaic function
- Anti-legionella function
- Optional coil
- Controller with software in 6 languages
- MCS Certification

## THERMODYNAMIC SOLAR PANEL

- Anodized aluminium, with solocoat flexible finishing
- Easy to transport and install, only 8 kg and 2x0,8 m.
- No glass, rubber or fragile materials.
- No overheating and freezing problems
- It can be installed on the roof, wall, garden, etc.
- Panel efficiency does not decrease with age or dirt
- No need for cleaning and humidity resistance
- Estimated lifespan of 25 years
- Passed the corrosion test in a salt fog test equivalent to 20 years
- Solar Keymark Certification



24 HOURS A DAY / 7 DAYS A WEEK / 365 DAYS A YEAR



## SOLAR PERFORMANCE

Tested and certified according to the most rigorous European standards it has achieved an extraordinary coefficient of performance of 3,9 according to the EN16147. The testing was carried out without solar irradiance, wind or rain. To enhance the real operating performance even more we advise to instal the thermodynamic solar pane facing South (North on the southern hemisphere), east or west. Vertically or horizontally on a wall, roof, flat roofbut always on a landscape position.



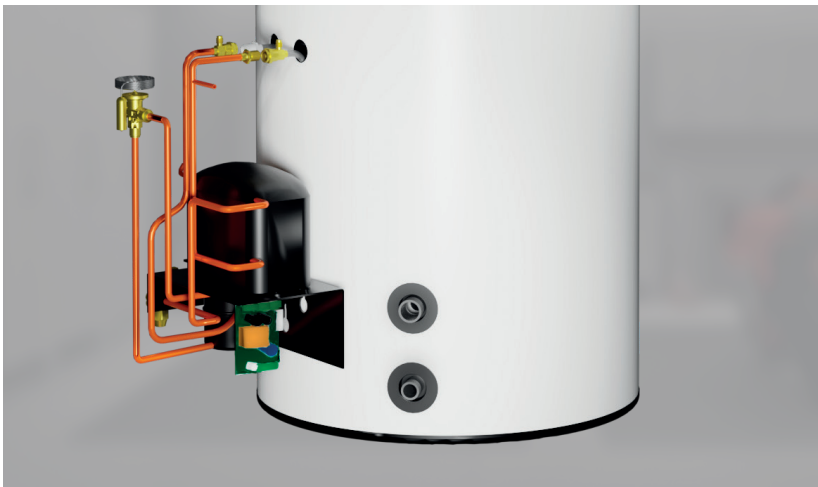
## SOLID AND ROBUST

The thermodynamic solar panel is made of anodised aluminium with a special Solokote finishing that ensures it's robust and long-lasting against corrosion, in particular when exposed to saline and/or aggressive environments. This innovative technical feature allows energie to provide a 10 years warranty against corrosion, ensuring peace of mind to the end user.



## SIMPLE AND ERGONOMIC

The high efficiency of the hot water cylinder is achieved by using a high-density polyurethane foam that ensures a low heat loss rate, being able to keep the water heated for several days in a row even if the units is turned off.



## SOPHISTICATED

The equipment's indoor unit has a stainless steel or enamelled cylinder, as well as an external condenser. High density injected polyurethane insulation with cathodic protection. The thermodynamic block is equipped with a state-of-the-art compressor, with one of the lowest electrical consumptions on the market.

# THERMODYNAMIC SOLAR SYSTEM

## WORKING PRINCIPLE

The evaporation of the fluid that runs inside the closed looped circuit happens on the solar panel by capturing the heat from the sun, wind, rain and surrounding air by natural convection.

The heated fluid then travels to the compressor, that will compress the fluid increasing its pressure and also its temperature.

Then it goes to the heat exchanger where where this heat is transferred to the water.

After this, an expansion valve will make the pressure and temperature drop to sub-zero values. The fluid travels up to the thermodynamic solar panel and the cycle repeats again.



### EQUIPMENT

- No ducts and no fans
- No energy-consuming defrost cycles
- Super efficient low consumption compressor
- No need to install support equipment

### SOLAR PANEL

- Captures heat regardless of weather factors
- Primary circuit does not need to dissipate excess heat on hotter day
- Easy architectural integration, versatile without visual impact

# ELECTRONIC CONTROLLER

## DOMESTIC HOT WATER PRODUCTION

### ECO Operating Mode

The equipment only works as a Thermodynamic Solar System.

### AUTO Operating Mode

The equipment works as a Thermodynamic Solar System and/or electrical support should be required.

### BOOST Operating Mode

The equipment works with a Thermodynamic Solar System and electrical support simultaneously.



# PHOTOVOLTAIC INTELLIGENT FUNCTION

Take Full advantage of your PV System:

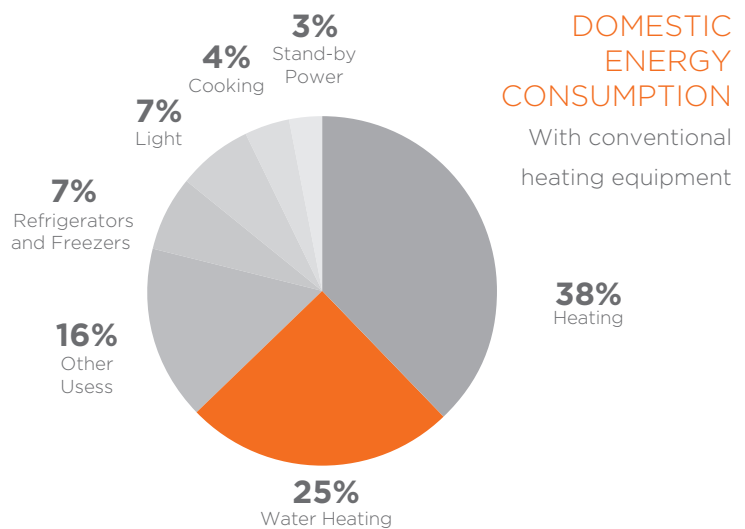
- Sets new standards of smart energy management
- Maximize your PV Solar Panels production and reduce your DHW costs
- Maximize the solar irradiation available by having the thermodynamic solar system working more when there is more sun available
- Get the balance between PV production and consumption with our intelligent controller

With PV Smart Grid Ready, the ENERGIE Solar System absorbs the extra power generated by PV Panels, Wind Energy or Small Hydro storing, what would be lost energy, into the water, enabling you to save even more.

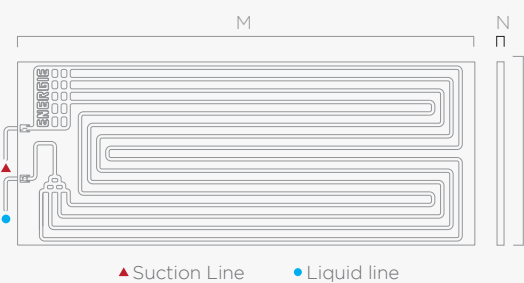


# SAVING UP TO 85%

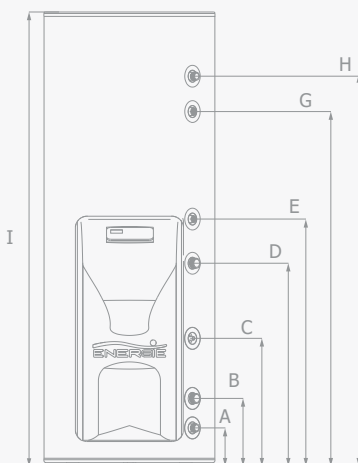
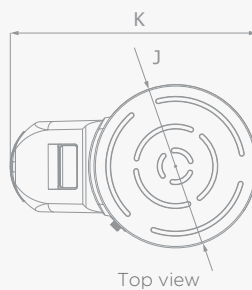
- Considering ECO250
- 7 hours of operation per day
- Consumption of 0.39 kW/h
- Required energy/month: 0.39 kW x 7h x 30 days = 81.9 kWh/month



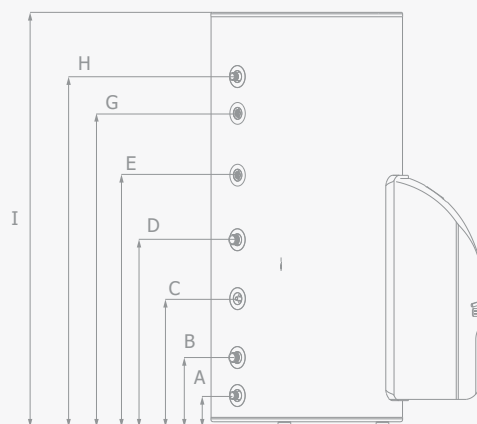
Equipment: **Thermodynamic Solar Panel**



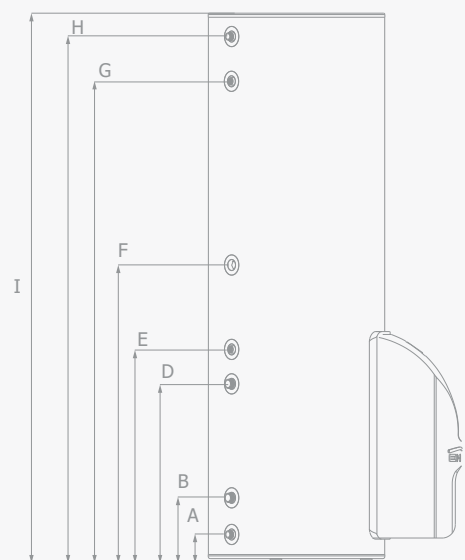
Equipment: **Storage Water Heater**



Front Connections:  
**200I / 200IX | 250I / 250IX**



Rear Connections:  
**300I / 300IX**



Rear Connections:  
**500I / 500IX**

## ECO - 1 Panel

TECHNICAL DATA			200I	250I	300I	200IX	250IX	300IX
Net weight		Kg	60	68	71	63	71	74
Volume		L	200	250	300	195	245	295
Material		-	Stainless steel					
Cathodic protection		-	Mg Anode (1"1/4) *					
Hydraulic connections	Water - inlet and outlet	Pol.	3/4"	3/4"	3/4"	1"	1"	1"
	PT Valve	-	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
	Recirculation	-	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
	Coil   entrance and exit	bar	-	-	-	1"	1"	1"
Insulation		-	High density polyurethane 50mm					
Maximum pressure		°C	7	7	7	7	7	7
Maximum operating temperature		kWh/24h	80	80	80	80	80	80
Heat loss (EN12897)		-	0.99	1.01	1.17	0.99	1.01	1.17
Heat Exchanger Capacity <sup>1</sup>			N/A **	N/A **	N/A **	a)20 ; b)12	a)20 ; b)12	a)20 ; b)12

\* If applicable | \*\* Not applicable

## THERMODYNAMIC SOLAR PANEL

Material	-	Anodized aluminum solarcoat
Dimensions (W x H x D)	mm	2000 x 800 x 20
Weight	Kg.	8
Maximum Working Pressure	bar	12
Maximum Exposure Temperature	°C	-40   120

## THERMODYNAMIC BLOCK

Dimensions (W x H x D)	mm	320 / 710 / 280
Weight	Kg.	17.5
Absorbed power (avg/max)	W	390   650
Thermal power (avg/Max)	W	1400   2380
Electric support power	W	1500
Refrigerant fluid / Qt. <sup>2</sup>	-/g	R513a / 1300
Piping material	-	Copper (DHP ISO1337)
Liquid line   asp.	Pol.	1/4"   3/8"
Power supply	V/Hz	230 / Single-phase / 50 or 60 <sup>3</sup>

## PERFORMANCE <sup>4</sup>

			200I	250I	300I	200IX	250IX	300IX
Load profile		-	L	XL	XL	L	XL	XL
Coefficient of performance (COP)	Air 14°C	-	3,69	3,84	3,92	3,69	3,84	3,92
Energy efficiency class	Air 14°C	-	A++	A+	A++	A++	A+	A++
Energy efficiency	Air 14°C	-	154	158	162	154	158	162
Annual energy consumption	Air 14°C	KWh/year	664	1060	1037	664	1060	1037
Amount of useful water at 40°C		L	261.3	349	362.5	256.3	344	357.5
Set point		°C	54	54	54	54	54	54
Interior sound level		dB	47	47	47	47	47	47

<sup>1</sup> a) Primary Circuit (Te = 90°C; Ts = 80°C); Domestic Hot Water Circuit (Te = 10°C; Ts = 60°C) | b) Primary Circuit (Te = 70°C; Ts = 60°C); Domestic Hot Water Circuit (Te = 10°C; Ts = 60°C)

<sup>2</sup> The fluid quantity must be verified by the installer. In certain cases, it is necessary to adjust the amount of fluid to ensure proper system operation.

<sup>3</sup> The 60 Hz frequency is available only on request.

<sup>4</sup> According to EN16147, Delegated Regulation (EU) N°812/2013 and Delegated Regulation (EU) N°814/2013.

DIMENSIONS mm		200I	250I	300I	200IX	250IX	300IX
A	Cold water	131	131	102	131	131	102
B	Coil outlet	-	-	-	231	231	231
C	Instrumentation	-	-	-	435	435	431
D	Coil inlet	-	-	-	690	690	631
E	Recirculation	-	840	850	-	840	850
F	Anode	-	-	-	-	-	-
G	PT valve	905	1205	1060	905	1205	1060
H	Hot water	1030	1325	1185	1030	1325	1185
I	Height	1243	1543	1403	1243	1543	1403
J	Diameter	580	580	650	580	580	650
K	Depth	879	879	953	879	879	953
L					800		
M					2000		
N					20		

## ECO - 2 Panels

TECHNICAL DATA STORAGE		200IS	250IS	300IS	250ISX	300ISX	500IS	500ISX	
Net weight	Kg.	60	68	71	71	74	73	93	
Volume	L	200	250	300	245	295	455	443	
Material	-	Stainless steel							
Cathodic protection	-	Mg Anode (1"1/4) *							
Hydraulic connections	Water - inlet and outlet	-	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"
	PT Valve	Pol.	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
	Recirculation	-	-	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"
	Coil   entrance and exit	-	-	-	-	1"	1"	-	1"
Insulation	-	High density polyurethane 50mm							
Maximum pressure	bar	7	7	7	7	7	7	7	
Maximum operating temperature	°C	80	80	80	80	80	80	80	
Heat loss (EN12897)	kWh/24h	0.99	0.99	1.01	1.17	0.99	1.01	1.17	
Heat Exchanger Capacity <sup>1</sup>	kWh	N/A **	N/A **	N/A **	a)20 ; b)12	a)20 ; b)12	N/A **	a)20 ; b)12	

\* If applicable | \*\* Not applicable

## THERMODYNAMIC SOLAR PANEL

Material	-	Anodized aluminum solarcoat
Dimensions (W x H x D)	mm	2000 x 800 x 20
Weight	Kg	8
Maximum Working Pressure	bar	12
Maximum Exposure Temperature	°C	-40   120

## THERMODYNAMIC BLOCK

Dimensions (W x H x D)	mm	320 / 710 / 280	
Weight	Kg	17.5	
Absorbed power (avg/max)	W	620   950	
Thermal power (avg/max)	W	2300   3760	
Electric emergency backup	W	1500	2200
Refrigerant fluid / Qt. <sup>2</sup>	-/g	R513a / 1400	
Piping material	-	Copper (DHP ISO1337)	
Liquid line   suction line	Pol.	3/8"   1/2"	
Power supply	V/Hz	230 / Single-phase / 50 or 60 <sup>3</sup>	

## PERFORMANCE <sup>4</sup>

		200IS	250IS	300IS	250ISX	300ISX	500IS	500ISX
Load profile	-	L	XL	XL	XL	XL	XXL	XXL
Coefficient of performance (COP)	Air 14°C	3,6	3,7	3,8	3,7	3,8	3,7	3,7
Energy efficiency class	Air 14°C	A++	A+	A+	A+	A+	A+	A+
Energy efficiency	Air 14°C	152	154	158	154	158	152	152
Annual energy consumption	Air 14°C	-kWh/Year	673	1091	1063	1091	1063	1416
Amount of useful water at 40°C	L	231	349	363	344	358	599	599
Set point	°C	54	54	54	54	54	54	54
Interior sound level	dB	47	47	47	47	47	47	47

<sup>1</sup> a) Primary Circuit (Te = 90°C; Ts = 80°C); Domestic Hot Water Circuit (Te = 10°C; Ts = 60°C) | b) Primary Circuit (Te = 70°C; Ts = 60°C); Domestic Hot Water Circuit (Te = 10°C; Ts = 60°C)

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DIMENSIONS mm		200IS	250IS	300IS	250ISX	300ISX	500IS	500ISX
A	Cold water	131	131	102	131	102	102	102
B	Coil outlet	-	-	-	231	231	-	237
C	Instrumentation	-	-	-	435	431	-	-
D	Coil inlet	-	-	-	690	631	-	657
E	Recirculation	-	840	850	840	850	784	784
F	Anode	-	-	-	-	-	1095	1095
G	PT valve	905	1205	1060	1205	1060	1772	1772
H	Hot water	1030	1325	1185	1325	1185	1937	1937
I	Height	1243	1543	1403	1543	1403	2023	2023
J	Diameter	580	580	650	580	650	650	650
K	Depth	879	879	953	879	953	953	953
L					800			
M					2000			
N					20			

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