



S O L E

SOLAR SYSTEMS MANUFACTURER

EST. 1974

# LANDMARKS IN THE HISTORY OF SOLE



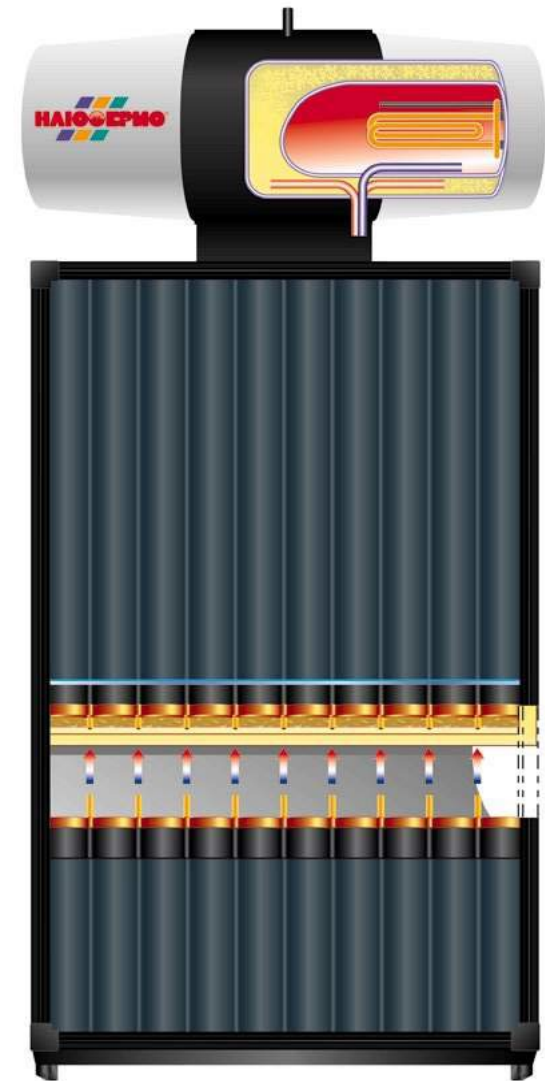
# SOLE BACKGROUND

1974 First manufacturing plant of solar thermal collectors and systems in Europe!!!



**Innovative character  
from the early stages:**

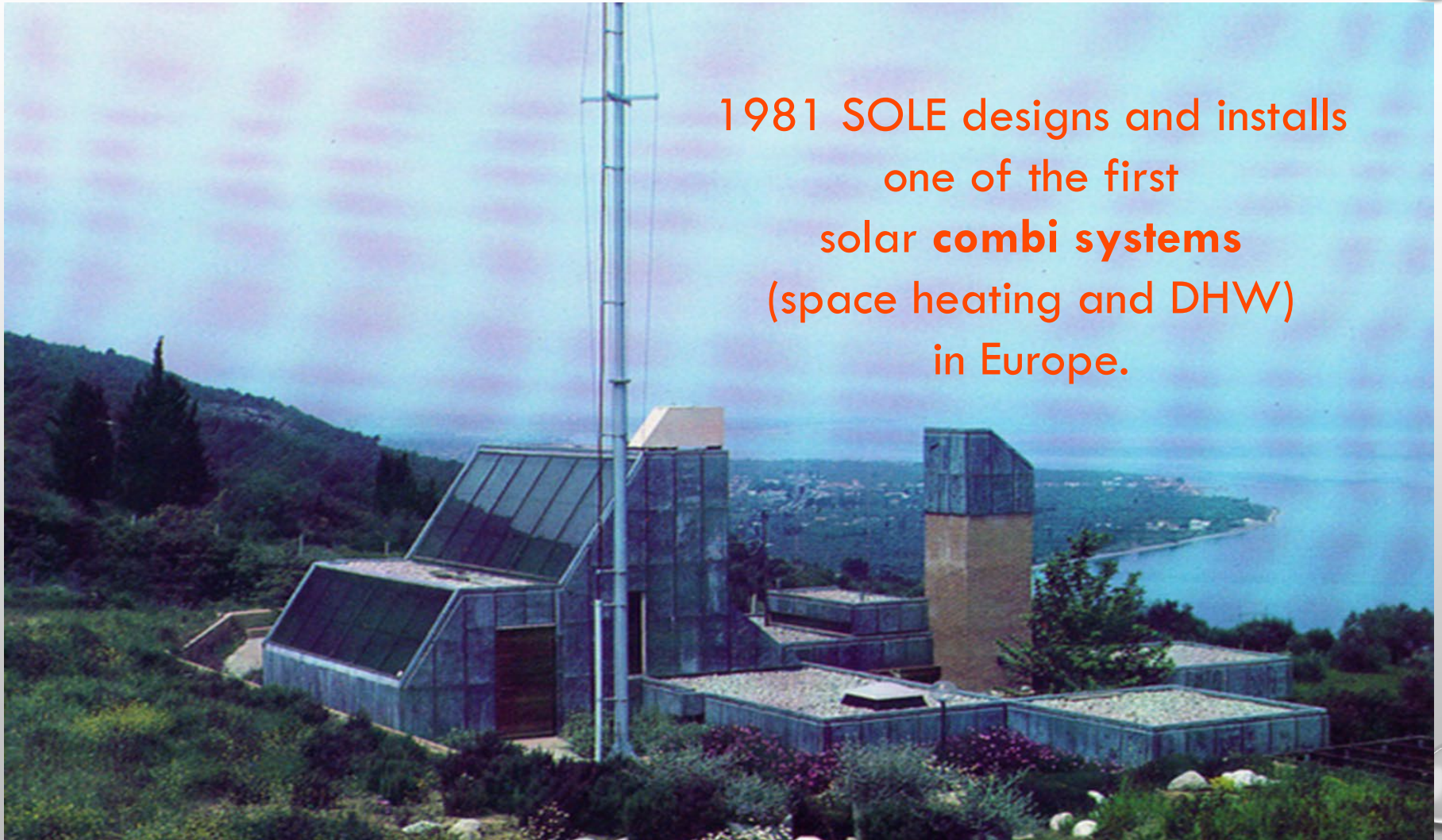
**In 1975 SOLE invents  
the closed circuit  
in solar thermal systems.**



1978 SOLE designs and installs one of the first large scale centralized solar system in Europe.

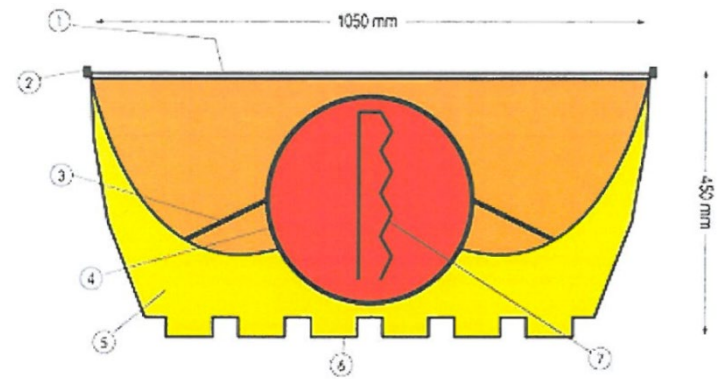


Marathon Beach Hotel Attika



1981 SOLE designs and installs  
one of the first  
solar **combi systems**  
(space heating and DHW)  
in Europe.

1983 SOLE designs and develops a unique compact parabolic ICS (Integral Collector Storage) solar system.



Today SOLE exports 75% of its production  
in all 5 continents.







SOLAR SYSTEMS MANUFACTURER

## SOME WORLDWIDE PROJECTS MADE BY SOLE

Year	Project Name	Country	Size	Year	Project Name	Country	Size
1975	Calypso Hotel	Greece	100 m <sup>2</sup>	2005	Simien Park Lodges Hotel	Ethiopia	43.2 m <sup>2</sup>
1976	Skiathos Palace Hotel	Greece	250 m <sup>2</sup>	2007	<b>European Business Center</b>	U.A.E	216 m <sup>2</sup>
1978	Marathon Beach Hotel	Greece	275 m <sup>2</sup>	2008	German School of Athens	Greece	180 m <sup>2</sup>
1979	Nuclear Center "DEMOKRITOS"	Greece	800 m <sup>2</sup>	2009	Tesco Super Market		
1981	Olympic Stadium of Athens	Greece	500 m <sup>2</sup>		Solar Air – Conditioning	Hungary	1.036 m <sup>2</sup>
1989	Olympiaces Diakopes Hotel	Greece	400 m <sup>2</sup>	2009	<b>Burj Khalifa Tower</b>	U.A.E	1.020 m <sup>2</sup>
1989	Daidalos Hotel	Greece	400 m <sup>2</sup>	2009	<b>Hamdan Sports Complex</b>	U.A.E	1.026 m <sup>2</sup>
1992	Peace & Friendship Stadium	Greece	300 m <sup>2</sup>	2010	Us Military Base	Greece	260 m <sup>2</sup>
1994	Achaia Clauss – Winery	Greece	300 m <sup>2</sup>	2011	French University Usj –		
1999	PHOTONIO Solar Air – Conditioning	Greece	2.664 m <sup>2</sup>		Campus De L'innovation	Lebanon	240 m <sup>2</sup>
1999	Aziza Hotel	Tunisia	476 m <sup>2</sup>	2012	Caldera Beach Hotel	Greece	1.040 m <sup>2</sup>
1999	Mediterranean Hotel	Tunisia	626 m <sup>2</sup>	2012	<b>Al Raha Gardens Villas</b>	U.A.E	730 m <sup>2</sup>
1999	El – Kanta Hotel	Tunisia	674 m <sup>2</sup>	2012	<b>Fishing Harbor Village</b>	U.A.E	244 m <sup>2</sup>
2000	Berber Palace	Morocco	550 m <sup>2</sup>	2012	<b>Future Schools</b>	U.A.E	270 m <sup>2</sup>
2000	Rethymno Village Solar Air – Conditioning	Greece	440 m <sup>2</sup>	2013	First Hybrid Swimming Pool Center	Greece	551 m <sup>2</sup>
2000	Lentzakis Hotel Solar Air – Conditioning	Greece	448 m <sup>2</sup>	2013	Kuala Lumpur Airport	Malaysia	65 m <sup>2</sup>
2001	Club Med Hotel	Tunisia	1.000 m <sup>2</sup>	2014	Navy Officers School	Greece	162 m <sup>2</sup>
2002	<b>American Embassy</b>	U.A.E	320 m <sup>2</sup>	2016	<b>Bloom Gardens</b>	U.A.E	403 m <sup>2</sup>

# BURJ KHALIFA SOLAR SYSTEM

The tallest building in the  
world

Not Only!!!

It holds several world records:

- ✓ 58 elevators with world record in travel distance and speed
- ✓ The "highest" veranda in the world
- ✓ The "highest" pool in the world (76)
- ✓ 3.000 stairs
- ✓ 28.261 glass panels
- ✓ 309.473 m<sup>2</sup> floor area

Plus:

- ✓ 1.020 m<sup>2</sup> Solar Collectors for hot water
- ✓ 80.000 ltr hot water tanks

**BURJ KHALIFA**  
THE CROWN JEWEL OF DUBAI

**829.8 M**  
2,722 FT

BECAME THE WORLD'S TALLEST BUILDING IN JULY **2007**

DESIGN INSPIRED BY THE "HYMENOCALLIS" DESERT FLOWER

**309,473 SQ.M.**  
FLOOR AREA

**58** ELEVATORS TRAVELLING AT 10M PER SECOND

**3,000** STAIRS FROM TOP TO BOTTOM

COVERED IN **28,261** GLASS PANELS

AT PEAK CONSTRUCTION, **12,000** WORKERS AND CONTRACTORS WERE ON SITE EVERY DAY

**1.020 m<sup>2</sup>** SOLAR THERMAL COLLECTORS

**WORLD RECORDS**

- > TALLEST BUILDING IN THE WORLD
- > ELEVATOR TRAVELLING THE LONGEST DISTANCE
- > HIGHEST OUTDOOR OBSERVATION DECK
- > TALLEST MOSQUE ON 158TH FLOOR
- > HIGHEST SWIMMING POOL ON 76TH FLOOR

COST **\$1.4** BILLION

PRICE OF PENTHOUSE CAN RUN UP TO **AED 6,120** PER SQ.FT

# THERMOSIPHON SYSTEM

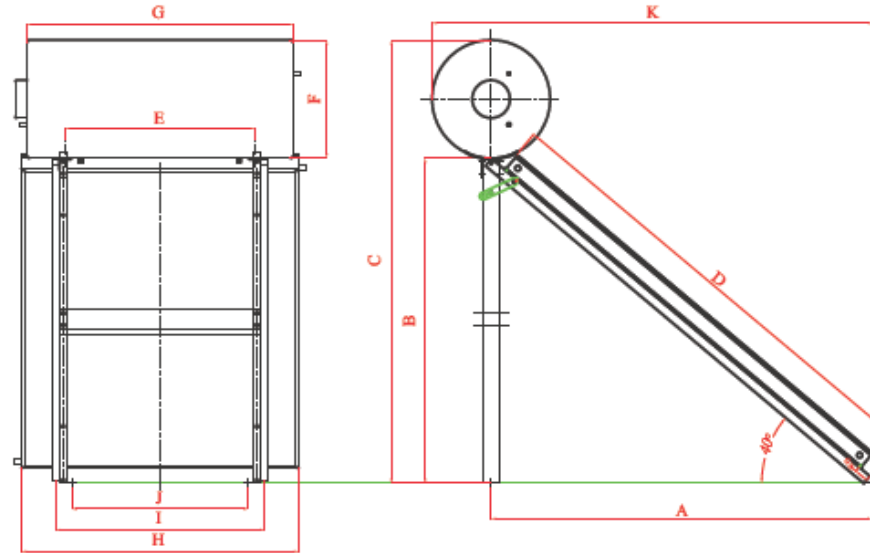


# CHARACTERISTICS

- **Durable:** withstanding 22.5 bar pressure!!!
- **Discrete:** with a low version (hidden tank) for preserving architectural design.
- **Quality:** is guaranteed as in for all SOLE products. The solar water heater is manufactured in compliance with the international standards ISO 9001:2015 and tested according to international standards EN12976-1-2.
- **Glass coated steel with polyurethane insulation in the interior, plus increased**
- **electrolysis protection with magnesium anode will ensure a trouble free operation for many years.**
- **Installation:** Simply place it on the roof and connect to the water supply pipe and hot water outlet pipe. It can also be connected with the electricity mains if so desired.



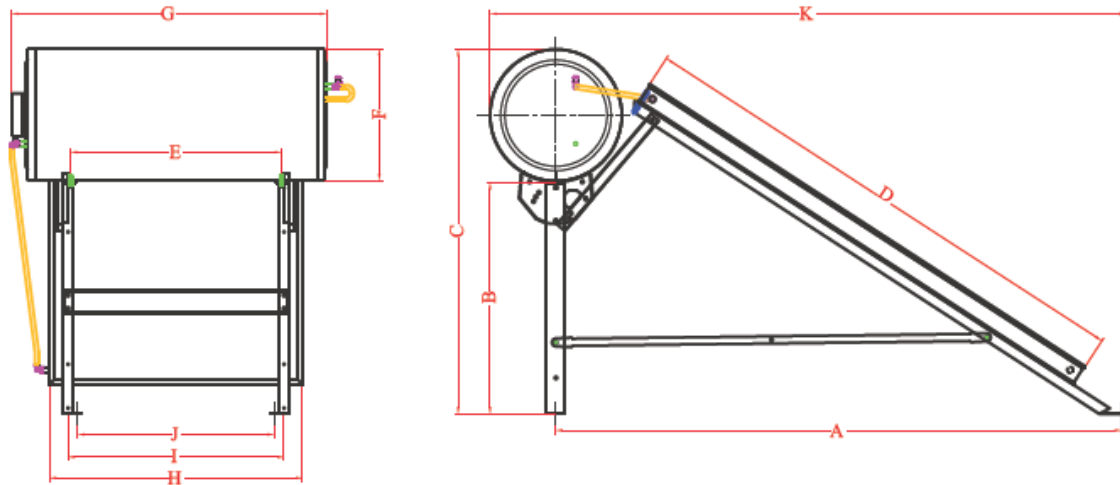
# DESIGN



## STANDARD HEIGHT DIMENSIONS mm.

TYPE	A	B	C	D	E	F	G	H	I	J	K
80-1-S100	897	776	1216	1026	480	440	870	960	565	425	1123
100-1-S125	1092	940	1380	1280	650	440	1030	960	735	595	1317
125-1-S150	1291	1107	1547	1540	800	440	1080	960	895	745	1516
150-1-S200	1613	1377	1877	1960	800	500	1195	960	895	745	1868
150-1-S230	1613	1377	1877	1960	800	500	1195	1165	895	745	1868
200-1-S200	1613	1377	1907	1960	800	530	1215	960	895	745	1883
200-1-S230	1613	1377	1907	1960	800	530	1215	1165	895	745	1883
200-1-S260	1747	1489	2019	2135	800	530	1215	1238	895	745	2017
300-2-S200	1613	1377	1907	1960	1345	530	1905	1980	1439	1289	1883
300-2-S230	1613	1377	1907	1960	1345	530	1905	2390	1439	1289	1883

# DESIGN

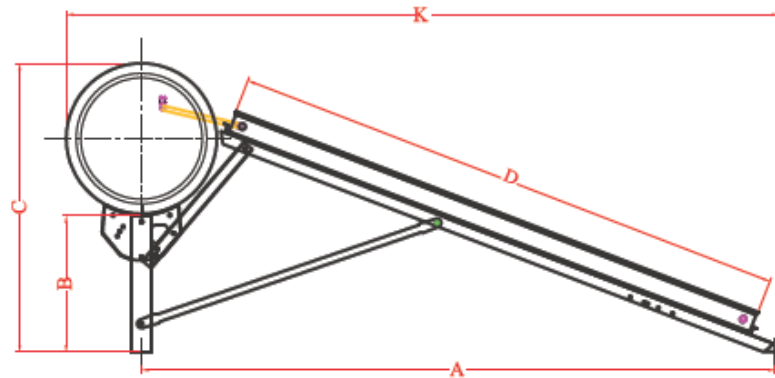
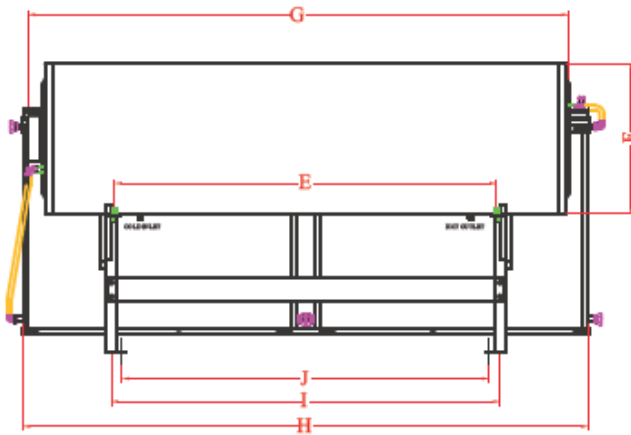


## LOW HEIGHT DIMENSIONS mm.

TYPE	A	B	C	D	E	F	G	H	I	J	K
150-1-S200	2147	878	1383	1960	800	500	1195	960	820	745	2411
200-1-S230	2147	878	1413	1960	800	530	1215	1165	820	745	2426
300-2-S200	2147	878	1413	1960	1345	530	1905	1980	1370	1295	2426

The new thermosiphon system of SOLE is also available in low height in three sizes, 150, 200 and 300ltr.

# DESIGN



## EXTRA LOW HEIGHT DIMENSIONS mm.

TYPE	A	B	C	D	E	F	G	H	I	J	K
150-1-S200	2231	480	988	1960	800	500	1195	960	820	745	2495
200-1-S230	2231	480	1018	1960	800	530	1215	1165	820	745	2510
300-2-S200	2231	480	1018	1960	1345	530	1905	1980	1370	1295	2510

# SYSTEM COMPONENTS

Description of solar system and components

## General Description

This solar system is a closed loop thermosiphon unit which delivers hot water for domestic use. It consists from the collector, the accumulation tank, the support system, the hydraulic accessories and the thermo-convention liquid.

Four nominal sizes of accumulation tanks are combined with four different sizes of collectors as the table below:

MODEL	TANK NOMINAL SIZES			COLLECTOR NOMINAL SIZES		
	150 ltrs	200 ltrs	300 ltrs	2,00m <sup>2</sup>	2,30m <sup>2</sup>	2,60m <sup>2</sup>
150-1-200	1			1		
150-1-230	1				1	
200-1-230		1			1	
200-1-260		1				1
300-2-200			1	2		
300-2-230			1		2	
300-2-260			1			2



# TANK

## Accumulation tank (cylinder)

The solar accumulation tank is an indirect (double circuit) hot water horizontal cylinder. The inner surface is enameled at 850°C to guarantee potable sanitary water for long life. Additionally it is protected against rusting with a large magnesium anode.

The ecologic polyurethane foam insulation guarantees minimum thermal losses even at very low ambient temperatures. The external cover of the tank can resist any extreme weather conditions for life. The internal heat exchanger with large surface guarantees the energy transfer to the domestic hot water.

The hot water exits from the hottest zone (level) of the tank. At the same time equal quantity of cold water enters the tank at the coldest zone (level). The solar tank can be optionally (accessory) equipped with immersion electric heater (electric element) for use only for emergency situations. The immersion electric heater is available in 2 kW or 3kW or 4 kW at 230 Volt. It is equipped with control thermostat set at 60°C and safety thermostat (thermal cut out) manually reset.

The safety valve only opens to discharge when the system pressure exceeds 10bar in the form of water.

Technical Data of tanks as table below:

	Nominal size		
	150	200	300
Length (mm)	1185	1215	1915
Diameter (mm)	500	530	530
Weight (kg)	46,7	50,8	83
Capacity (ltr) (Incl. h.exchanger)	142	170	276
Test pressure (bar)	22.5	22.5	22.5
Operating pressure (bar)	15	15	15
Max temperature (°C)	90 °C	90 °C	90 °C
Cold & hot water connectors (male)	½"	½"	½"

# COLLECTOR

## Collector

The collectors are manufactured in 4 sizes with nominal area of -1.50m<sup>2</sup>, 2.00m<sup>2</sup>-2.30m<sup>2</sup> -2,60m<sup>2</sup>. The absorbers of the collectors are made by copper tubes and the fins area by selective aluminum fins. The fins are welded to the tubes by laser welding. The frame of the collector is made by extruded aluminum epoxy oven painted to resist ambient conditions.

The glass cover is a “prismatic securit” glass of 3.2mm thickness for maximum penetration of solar irradiation. At the back and sides of the absorber there is sufficient insulation of rock wool and glass wool to minimize heat loses and to resist stagnation temperatures.

Technical data of collector as the table below:

Stagnation temperature: 164oC

Test pressure: 22.5 bar

Operating pressure: 15bar

	Nominal size (m <sup>2</sup> )		
	2,00	2,30	2,60
Length (mm)	1960	1960	2135
Width (mm)	960	1165	1238
Depth (mm)	81	81	81
Weight (kg)	32,0	38,8	44

# INSTALLATION

Ideal for residential and commercial. Villas, houses, apartment buildings, hotels, factories and any other large project, by installing as many as needed, side by side. This will eliminate the need for central boilers, pumps, automation, etc.

The number of systems to be installed depends in the hot water consumption needs. In those types of installations the systems can be connected in two alternative ways:

- In series: If the systems are used for the consumption of one user (1 house, 1 villa) it is recommended to be connected in series
- In parallel: If the systems are to be connected for more than one user (2 houses for example), then is recommended to be connected in parallel.

# ADVANTAGES

- Maximizes efficiency
- No need for refilling the solar loop
- Best aesthetic results. Low version with hidden tank available
- Easy to install
- Minimum maintenance needed
- Anode protection



# TRANSPORT & STORAGE



# ALL OVER THE WORLD



ETHIOPIA



EGYPT



UAE



SPAIN



**THANK YOU**