

# As long as the sun rises...























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<sup>&</sup>quot;Solar thermal energy is the exploitation of the energy coming from the Sun, which is transferred to a heat transfer medium such as water or air."





### THE COMPANY

SONNE AKTION LTD was created with a philosophy focused on quality, innovation and respect to the environment. It produces top quality products with long lifespan. Its long term evolution is based on steady steps, aiming to continuous product improvement and using cutting-edge technology.

Having a particular sensitivity to environmental issues, it has chosen copper as raw material for the production of the top solar water heaters SONNE AKTION (storage tanks, collectors, boilers).

Copper is a fully recyclable element, totally compatible with the environment. In order to face the upcoming challenges, SONNE AKTION Ltd is staffed with people who have the "know-how", appreciate the quality and work with passion in order to respond promptly to the needs and demands of the market.

At the private modern facilities at Schimatari are produced all the products, which are controlled strictly step - by - step at all stages of the production.

SONNE AKTION LTD has installed and maintains a quality management system in the production and trading of solar systems ISO 9001: 2008 (certificate TUV NORD).

The SONNE AKTION products are certified by the European SOLARKEYMARK, according to EN 12975 & EN 12976 standards. All the products are also accompanied by performance measurements by the Greek institutes DEMOKRITOS and ELOT, in accordance with the international standards.

We are able to plan and execute both large and small orders for every point of the planet with seriousness and enthusiasm.

We believe in long term relationships and we are ready to face any desire and any demand.





















# **SOLAR SYSTEMS**

The SONNE AKTION solar thermal system was designed to offer high performance, mechanical resistance, easy installation and long lifespan.

All parts of the system are made of high-quality materials and according to international standards, offering longevity, durability and ensuring the return of the investment. The innovative design and construction of the tank and the solar collectors ensures high performance regardless of weather conditions, while the support provides high stability and mechanical resistance to the solar thermal system.

Assembling the system is very easy as soon as you read carefully the instructions. SONNE AKTION solar thermal systems are available in the following models:



### **ATLAS MODELS**

		CI	CDACE		COLL	ECTOR
		31	ORAGE		COLL	ECIOR
SYSTEM	CODE	LITRES	DIAMETER	LENGTH	NUMBER OF COLLECTORS	TYPE OF COLLECTOR
ATLAS ST12	T12	115	50	113	1	CA160
ATLAS STL12	T12	115	50	113	1	CA200
ATLAS STE15	T15	142	50	132	1	CA200
ATLAS ST15	T15	142	50	132	1	CA230
ATLAS STE16	T16	154	58	113	1	CA200
ATLAS ST16	T16	154	58	113	1	CA230
ATLAS STL16	T16	154	58	13	2	CA160
ATLAS STEE20	T20	194	58	132	1	CA200
ATLAS STE20	T20	194	58	132	1	CA230
ATLAS ST20	T20	194	58	132	2	CA160
ATLAS STL20	T20	194	58	132	2	CA200
ATLAS ST30	T30	292	58	183	2	CA200
ATLAS STL30	T30	292	58	183	2	CA230













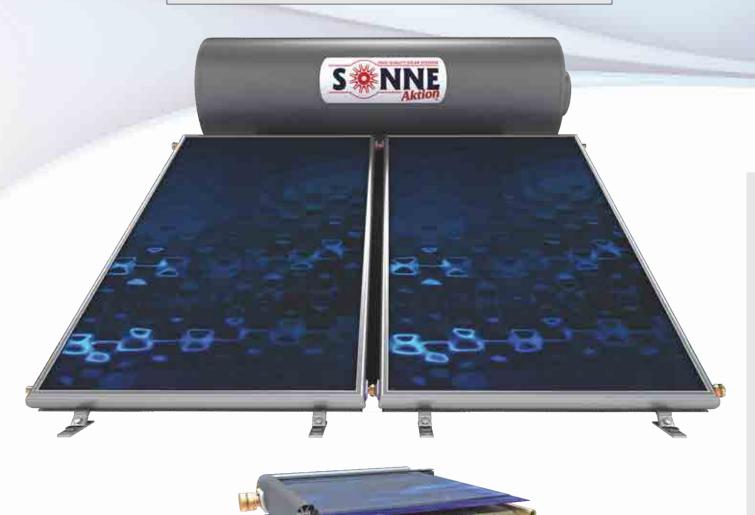








# **SOLAR SYSTEMS**



### **PHAETHON MODELS**

		COLL	ECTOR			
SYSTEM	CODE	LITRES	DIAMETER	LENGTH	NUMBER OF COLLECTORS	TYPE OF COLLECTOR
PHAETHON ST12	T12	115	50	113	1	SA170
PHAETHON STL12	T12	115	50	113	1	SA200
PHAETHON STE15	T15	142	50	132	1	SA200
PHAETHON ST15	T15	142	50	132	1	SA240
PHAETHON STE16	T16	154	58	113	1	SA200
PHAETHON ST16	T16	154	58	113	1	SA240
PHAETHON STL16	T16	154	58	13	2	SA170
PHAETHON STEE20	T20	194	58	132	1	SA200
PHAETHON STE20	T20	194	58	132	1	SA240
PHAETHON ST20	T20	194	58	132	2	SA170
PHAETHON STL20	T20	194	58	132	2	SA200
PHAETHON ST30	T30	292	58	183	2	SA200
PHAETHON STL30	T30	292	58	183	2	SA240













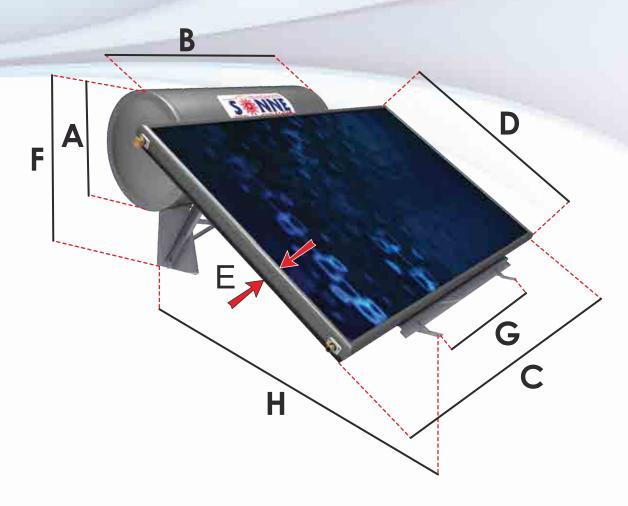








# LOW HEIGHT SOLAR SYSTEMS



# DIMENSIONS [cm] OF LOW HEIGHT SOLAR SYSTEMS WITH **PHAETHON** COLLECTORS

Model	A	<b>B</b> element cover length not included	С	D	E	F	G	н	Capacity [lt]	Collector surface [m²]
160/2,4HPH	58	100	200	120		90		144	144	2,4
200/3,4PH	58	120	210	157	8,5	130	86,5	168	168	3,4
300/4,0HPH	58	170,5	200	197		130		220	220	4

# DIMENSIONS [cm] OF LOW HEIGHT SOLAR SYSTEMS WITH **ATLAS** COLLECTORS

Model	A	<b>B</b> element cover length not included	С	D	E	F	G	н	Capacity [It]	Collector surface [m²]
160/2,3HA	58	100	197	117		90		144	154	2,3
200/3,2A	58	120	210	157	7,5	130	86,5	168	194	3,2
300/4,0A	58	170	200	197		130		220	292	4

The total length of the boiler included the element cover is = B + 12.5cm





















# **COPPER STORAGE**



Internal tank of pure copper CuDHP (CW024A) with purity Cu > 99,9% certified for installations of water supply according to DIN50930-6/2001.

Constructed by 2 copper disks of 2 mm thickness which have been reshaped with specially designed hydraulic presses and welded together on automatic machine with a single weld. Due to antibacterial ability, copper prevents growth of pathogenic microorganisms and bacteria like Legionella which is caused by the Legionella pneumophila bacteria.

Inner tank:	2mm copper surface
Heat Exchanger (Jacket):	copper of 0,8 mm thickness
Insulation:	Polyurethane 60 mm (44 kg/m³)
Thermal insulation conductivity:	0,0120 W/mK
External cover:	Alluzing Grey
Side covers :	Alluzing Grey, specially designed to be attached without screws
Electrical Resistance :	power according to demand, includes thermostat























### **COPPER STORAGE**

10 POINTS OF SUPERMACY OF

COPPER PRODUCTS

SONNE AKTION

### 1. Unlimited lifespan!

Copper is tested & trusted by the ancient times. It is not eroded, not altered nor affected by electrolytic corrosion. Therefore the tanks that are made entirely of pure copper CuDHP (CW024A), containing Cu> 99,9%, have an unlimited lifespan.

### 2. Top thermal efficiency!

Copper has higher heat transfer coefficient in comparison to other metal materials (7 times more that steel). Copper heat exchangers ensure faster heating of water than any other device.

### 3. Construction innovations!

The construction of the copper storage tanks is unique & patented. The 2 cup-shaped copper pieces bind each other with only one welding seam, made by automatic rotating machinery. The combination of high quality raw material (copper) and the innovative production process, gives the copper tanks strong mechanical strength, resulting in the highest resistance test pressure 20 bar, in which are controlled one by one.

### 4. Smart Engineering Solutions!

Unique design of the optional copper heat exchanger connecting the boiler with the central heating, resulting in faster heating of water, while at the same time preventing the flow of cold water from the boiler.

### 5. Antibacterial properties!

Given its demonstrated antibacterial properties, copper combats the growth of pathogens (bacteria, viruses), which can cause serious illnesses, like the Legionnaires' disease caused by the bacterium Legionella pneumophila.

### 6. No maintenance need!

No maintenance costs due to the absence of magnesium rod. There is no phenomenon of electrolysis and it is the only solar system without magnesium rod. So, the copper storage tanks do not need the replacement of the magnesium rod, as it is required in steel storage tanks.

#### 7. Unique for Drinking Water!

The storage tank is made from pure copper CuDHP (CW024A) certified for use for drinking water, in accordance with DIN 50930-6 standard / August 2001.

The absence of magnesium rod inside the storage tank retains water without magnesium skimmings, ensuring that the water is clear and drinkable.

#### 8. Certified materials!

All production materials are subjected to strict quality controls from the company's relevant department and comply with the strictest quality standards.

#### 9. Certified products!

All SONNE AKTION products are certified with the internationally recognized European quality certification SOLARKEYMARK, according to EN12975 and EN12976 standards. Furthermore, they have performance measurements based on international standards from DEMOKRITOS Research Institute and the European Institute INETI.

#### 10. Company certification!

SONNE AKTION LTD is certified with ISO 9001:2008.





















# **GLASS STORAGE**

Storage tank from European 3 mm thick steel with special enamel coating heated to high temperatures (850°C).

The implementation of enameling gives excellent anti-rust protection and resistance to sudden changes in temperature ensuring long lifetime of the storage tank.

The enamel used is water-soluble, ecological & perfectly hygienic since it contains no chemicals.



2,5 mm steel coated with glass surface (tempered at temp >

850)

Heat Exchanger (Jacket): steel of 1,5 mm thickness

Insulation: Polyurethane 60 mm (44 kg/m³)

Thermal insulation conductivity: 0,0120 W/mK

Protection Anode Rod (Magnesium)

External cover: selection of Grey, Brown, White

Side covers: specially designed to be attached without screws

Electrical Resistance: power according to demand, includes thermostat

Safety valves: 3 Bar (closed circuit), 8 Bar (system)

**Warranty 5 years** 





Inner tank:

















# DEFINITION AND PROPERTIES OF ENAMELING

#### WHAT IS ENAMELINGP

Enamelling is the special glass surface created by melting and association of enamel onto a steel surface.

The enamel-which is a mixture of mineral-silicates, is completely healthy and environmentally friendly, since it does not contain hazardous chemicals, are soluble in water and heated at high temperatures (> 850 ° C).

The implementation of anti-rust gives excellent protection and resistance to sudden changes in temperature (thermosok) and provides the most economical solution for protection in boilers and electrical stoves.

### PROPERTIES of ENAMEL

- Protection from all forms of oxidation (glass coating)-resistance in all weather conditions.
- Absolutely safe for public health-fulfillment of hygiene rules-does not allow the growth of bacteria.
- Resistance to acids, graffiti and solar radiation.
- Resistance to sudden changes in temperature (-60 ° C up to +450 ° C).
- There is no maintenance need, it is easy to clean painting ability.
- Not flammable, doesn't tow the dust.
- Electrical neutral combination of enamel-iron sheet.
- Suitable for any water quality (including salt).
- Recyclable environmentally friendly.
- Long-term safety and security.
- More economical than any other solution.













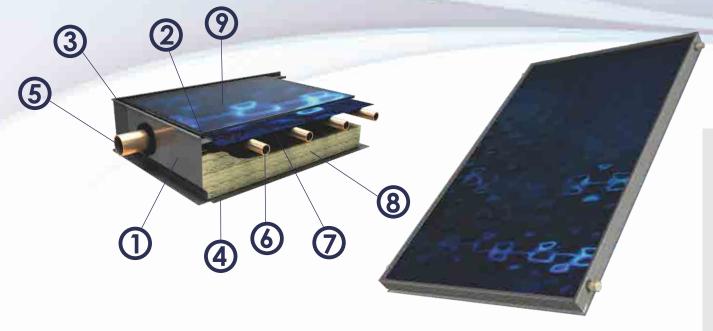








# **ATLAS COLLECTORS**



- 1. Frame of aluminum profile of 1.0mm thickness with electrostatic color paint RAL9006
- 2. Sealing with silicone
- 3. External corner aluminum link, that ensure the best possible implementation of the framework
- 4. Back of the collector from aluminum foil of 0,5mm thickness
- **5**. Absorber header from copper tube  $\Phi$ 22
- **6**. Absorber riser from copper tube Φ8
- 7. Absorber of aluminum full plate selective surface 0,4 mm
- 8. Thermal insulation from glass wool of density d = 20kg/m3 and 30mm thickness
- 9. Security tempered glass 4 mm, of high permeability T>0,94

Model	Length [cm]	Height [cm]	Total surface [m2]	Opening surface [m²]	Thickness [cm]	Weight [kg]	Max. operation pressure [bar]
CA160	102	157	1,60	1,50	7,5	27	
CA200	97	197	1,90	1,80	7,5	30	10 1
CA230	117	197	2,30	2,19	7,5	34	10 bar
CAH230	197	117	2,30	2,19	7,5	34	













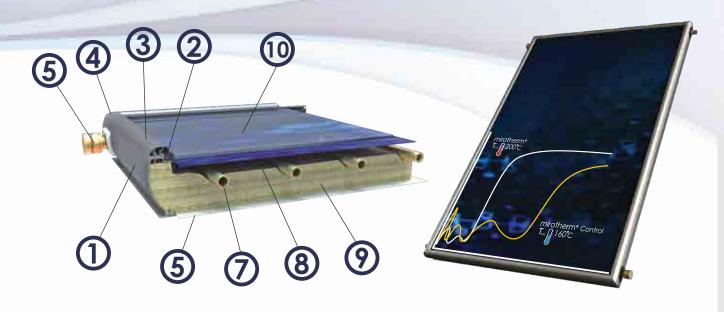








# **PHAETHON COLLECTORS**



- 1. Frame of aluminum profile 1.5mm with electrostatic color paint RAL7005
- 2. Internal sealing with EPDM rubber
- 3. Aluminum clasp with electrostatic color paint RAL9006
- **4.** Internal corner aluminum link, that ensure the best possible implementation and stability of the framework
- 5. Back of the collector from aluminum 0,5mm thickness
- **6.** Absorber header from copper tube  $\Phi$ 22
- **7.** Absorber riser from copper tube  $\Phi8$
- 8. Absorber of aluminum full plate selective surface 0,4 mm
- **9.** Thermal insulation from glass wool of density d = 20kg/m3 and 30mm thickness and side thermal insulation

Model	Length [cm]	Height [cm]	Total surface [m2]	Opening surface [m²]	Thickness [cm]	Weight [kg]	Max. operation pressure [bar]
SA170	105	160	1,68	1,50	8,5	32,0	
SA200	100	200	2,00	1,81	8,5	39,0	10.1
SA240	120	200	2,40	2,18	8,5	44,5	10 bar
SAH240	200	120	2,40	2,18	8,5	44,5	















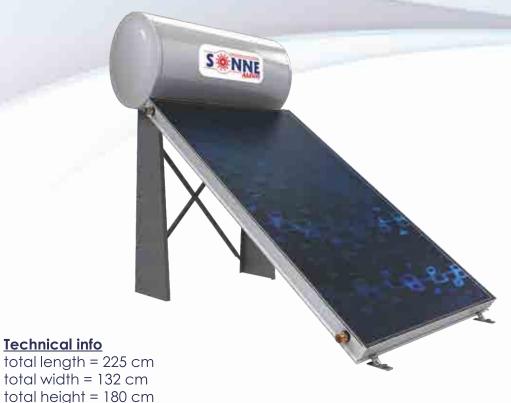






# **SOLAR SYSTEM ATLAS**

### Solar system "ATLAS" 200 litres [STE20]



### Storage 200 litres [ST20]

5 years warranty

Length: 121 cm Diam:58 cm weight: 75 kg

total weight (empty) = 127 kg (tolerance of +/- 5%)

Internal tank: 2,5mm steel coated with glass surface (tempered at temp > 850)

Heat Exchanger (Jacket): steel of 1,5 mm thickness

Insulation: Polyurethane 60 mm (44 kg/m3) Thermal insulation conductivity: 0,0120 W/mK

Anode Rod Protection (Magnesium)

External cover: selection of Grey, Brown, White

Side covers: specially designed to be attached without screws

Electrical Resistance: power according to demand, includes thermostat

Safety valves: 3 Bar (closed circuit), 8 Bar (system)

Actual Volume: 194 litres

Energy Class: B Standing loses: 48 w

### **Collector ATLAS CA230**

Frame: Aluminum
Back side: Aluminum
Glass: 3.2 mm, tempered
Insulation: 30 mm Rockwool

Absorber: 0,5mm aluminum with selective coating

Absorber tubes: copper pipes diam 22mm and 8mm raisers Dimension 1170 x 1970 x 75 mm Weight: 34 kg (empty)

Maximum operation pressure: 1000 Pa (10Bar)

Volume of Heat Transfer Fluid: 1,7 lit.

### Support base

Galvanized steel 2mm, Laser cut.















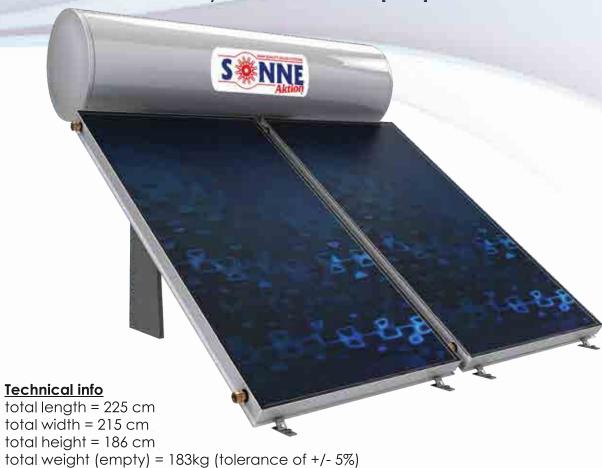






# **SOLAR SYSTEM ATLAS**

Solar system "ATLAS" 300 litres [STE30]



### Storage 300 litres

5 years warranty

Length: 183 cm Diam:58 cm weight: 98 kg

Internal tank: 2,5mm steel coated with glass surface (tempered at temp > 850)

Heat Exchanger (Jacket): steel of 1,5 mm thickness, surface 1,2 m<sup>2</sup>

Insulation: Polyurethane 60 mm (44 kg/m³) Thermal insulation conductivity: 0,0120 W/mK

Anode Rod Protection (Magnesium)

External cover: selection of Grey, Brown, White

Side covers specially designed to be attached without screws.

Electrical Resistance: power according to demand, includes thermostat.

Safety valves: 3 Bar (closed circuit), 8 Bar (system) Actual capacity: 292 Litres (tolerance +/- 2%) Energy Class: B Standing loses: 65 w

### **Collector ATLAS CA200**

Frame: Aluminum
Back side: Aluminum
Glass: 3.2 mm, tempered
Insulation: 30 mm Glass wool

Absorber: 0,4mm aluminum with selective coating

Absorber tubes: copper pipes diam 22mm and 8mm raisers Dimension 970 x 1970 x 75 mm Weight: 30 kg (empty)

Maximum operation pressure: 1000 Pa (10Bar)

Volume of Heat Transfer Fluid: 1,4 lit.

**Support base** Galvanized steel 2mm, Laser cut.















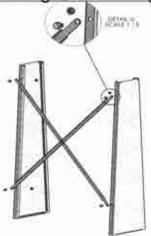






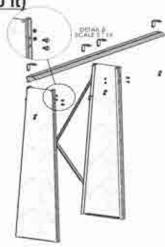
# TERRACE INSTALLATION

# Fitting on Terrace (200 & 300 lt)



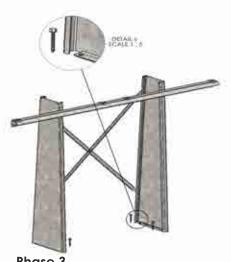
#### Phase 1

Place the two bases existing in thepackage facing each other, with the turned points inside and place the criss cross as shown on fig1 without tightening the bolts.



### Phase 2

Place the collector support overhang on the front of the base, as shown on **detail**  $\beta$  without tightening the bolts.



### Phase 3

Place the mounted base in the final position, orientate the back of the base (the cross) toface north and secure to the roof with the specific screws, also provided in the package.





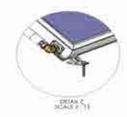
#### Phase 4

Aluminum feet are pre-installed on the boiler. Put the boiler on the base and tighten all bolts that have placed so far. The basis and the boiler is a single object (block) and we are going to use the collector as prop in the next phase.

#### Phase 5

Place the collector over the support overhang and secure it with the two upper support brackets we have screwed prior the collector's placement.

Next, lift all the collector about 5 cm from the ground and place the collector support feet at the two edges of the collector by tightening the bolts holding the aluminum brackets together.























# **TILE ROOF INSTALLATION**

**Step 1**: Assemble the 4 sides of the base (don't clench the screws).

The 2 big vertical bars with  $\Pi$  shape should be placed with the internal part face down.

In the upper end there are 1 round and 1 oval hole.

In the lower end there are 2 oval holes. Put the base at the spot of the roof tile you have decided that it's the place of final installation (fig 3).

The upper right perforated bar should be screwed to the upper oval hole of the big right vertical bar.

The lower right perforated bar should be screwed to the lower right big vertical bar

(the second oval hole from bottom to top). The left perforated bars should be screwed to the big left vertical bar respectively.

**Step 2**: Remove carefully the 4 tiles that are above the ones that are situated beneath the holes where you are going to screw the 4 flexible perforated blades. Screw the 4 flexible perforated blades into the wooden beams that are revealed underneath the tiles that have been taken off and formulate them in

order to reach over the front tile (picture 1). Reposition in their place the 4 tiles that you had removed.

If needed, break carefully with a sharp object a part of the cord underneath the tile in order to clip better on the perforated blade.





















# TILE ROOF INSTALLATION

Step 3: Screw the two large vertical U-shaped legs on the four perforated blades (design 2).

Step 4: Screw the headboard horizontally on the top of two large vertical feet. More concretely, screw it on the 2 round holes (not oval) (design 3).



More concretely, screw it on the last bottom holes (oval) (design 3).

The final tightening of the screws should be done after the installation of the collector, in

order to achieve the leveling of the collector (it is recommended a slight lifting of the collector on the side of the water outlet from the collector.

**Step 6**: Screw on the headboard (with 4 screws M8) the horizontal support of the upper part of the collector (design 3).

**Step 7**: Place the boiler on the headboard by screwing the 2 integrated aluminum support bases with 4 screws M8 x 4 (design 4).

**Step 8**: Place the collector first at the bottom of the support base so as to get the claw of the collector into the lower horizontal support. Clip the top of the collector into the aluminum hooks located on the horizontal base of the upper of the collectors (design 5).

Subsequently tighten the screws of the horizontal support of the collectors, as well as the aluminum brace hooks

of the horizontal support of the collectors of the upper part of the collector. The side view of the

final version of the support base is shown in design 6.



















































### CERTIFICATE OF CONFORMITY

Certificate No SKM 10078

DOS Hellas grants the present certificate to the enterprise:

SONNE AKTION LTD 39 Chalkidikis, 14451 Metamorfosi

for the product:

Flat plate Solar Collector type: ATLAS CA 160, ATLAS CA 200, ATLAS CA 230

which is produced in conformity with the normative document.

EN 12975-1:2006 ISO 9806:2013

at the following location:

68 Km N.R. Athens - Lamia 32009 Schimatari Viotias

The present certificate is granted in accordance with:

- the DOS Hellas General Rules for the Certification of Products.
- the Specific Rule for Certification EKIIII.001 «Specific Rule for Certification of Solar Collectors, and Thermal Solar Heating Systems for Domestic Hot

and is ruled by the terms of the relevant contract between DQS Hellas and the enterprise.

2019-04-20 Date of issue: Date of valid: 2022-08-29

Panagiotis Giannoutsos Director of Certification

Dr. Emmanuel Deliyannakis Managing Director

regionard

Products Certification Accreditation No: 735

Accredited Body: 4, Kalavriton Street, 14564 Kifissia - Athens, Greece

FKIIII-08 - 15/12/2014























### CERTIFICATE OF CONFORMITY

Certificate No SKM 10043/1

DQS Hellas grants the present certificate to the enterprise:

SONNE AKTION LTD 39 Chalkidikis, 14451 Metamorfosi

for the product:

Flat plate Solar Collector type: Phaethon SA170, Phaethon SA200, Phaethon SA240, Phaethon SA240 HOR

which is produced in conformity with the normative document:

EN 12975-1:2006 ISO 9806:2013

at the following location:

68 Km N.R. Athens - Lamia 32009 Schimatari Viotias



The present certificate is granted in accordance with:

- the DQS Hellas General Rules for the Certification of Products,
- \* the Specific Rule for Certification EKIIII.001 «Specific Rule for Certification of Solar Collectors, and Thermal Solar Heating Systems for Domestic Hot Water»,

and is ruled by the terms of the relevant contract between DQS Hellas and the enterprise.

Date of issue: 2021-09-10
Date of valid: 2024-09-10

The day

Panagiotis Giannoutsos Director of Certification Dr. Emmanuel Deliyannakis Managing Director

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Products Certification Accreditation No: 735 Accredited Body: 4, Kalavriton Street, 14564 Kifissia - Athens, Greece

FKIIII-08 - 15/12/2014























### CERTIFICATE OF CONFORMITY

Certificate No SKM 10068

DQS Hellas grants the present certificate to the enterprise:

SONNE AKTION LTD 39 Chalkidikis, 14451 Metamorfosi

for the product:

Flat plate Solar Collector type: ATLAS OL CA160, ATLAS OL CA200, ATLAS OL CA230, ATLAS OL CA230HOR

which is produced in conformity with the normative document:

EN 12975-1:2011 ISO 9806:2013

at the following location:

68 Km N.R. Athens - Lamia 32009 Schimatari Viotias



The present certificate is granted in accordance with:

the DQS Hellas General Rules for the Certification of Products,

the Specific Rule for Certification EKIIII.001 «Specific Rule for Certification of Solar Collectors, and Thermal Solar Heating Systems for Domestic Hot

and is ruled by the terms of the relevant contract between DQS Hellas and the enterprise.

Date of issue: 2021-09-10 Date of valid: 2024-09-10

John March &

Panagiotis Giannoutsos Director of Certification

Dr. Emmanuel Deliyannakis Managing Director



Products Certification Accreditation No: 735

Accredited Body: 4, Kalavriton Street, 14564 Kifissia - Athens, Greece

FKIIII-08 - 15/12/2014























### CERTIFICATION LICENCE TO USE KEYMARK

Certificate No SKM 10043/2

DQS Hellas grants the present certificate to the enterprise:

SONNE AKTION LTD

39 Chalkidikis, 14451 Metamorfosi

for the product:

Solar Systems Family:

ATLAS ST12, ATLAS STL12, ATLAS ST15, ATLAS STE15, ATLAS ST16, ATLAS STE16, ATLAS STL16, ATLAS ST20, ATLAS STE20, ATLAS STE20, ATLAS STE20, ATLAS ST20, ATLAS ST30, ATLAS ST30

which is produced in conformity with the normative document:

EN 12976-1 : 2017 EN 12976-2 : 2017 EN 12975-1 : 2010 EN 9806:2013





at the following location:

68 Km N.R. Athens - Lamia 32009 Schimatari Viotias

The present certificate is granted in accordance with:

- the DQS Hellas General Rules for the Certification of Products ,
- the Specific Rule for Certification EKIIII.001 «Specific Rule for Certification of Solar Collectors, and Thermal Solar Heating Systems for Domestic Hot Water»,
- the Specific CEN Keymark Scheme Rules for Solar Thermal Products,

and is ruled by the terms of the relevant contract between DQS Hellas and the enterprise.

Date of issue: 2018-08-30 Date of valid: 2021-08-29

Panagiotis Giannoutsos Director of Certification Dr. Emmanuel Deliyannakis Managing Director

Notified/ Accreditation Body: 4, Kalavriton Street, 14564 Kifissia - Athens, Greece

EEK.001-07-10/11/2011



















