

Biome Group Manufacturer Of Solar Thermal Systems



BECAUSE WE ALL NEED SUSTAINABLE ENERGY



Management System
ISO 9001:2015
Valid until:
2028-10-07
www.tuv.com
ID: 8190566414



PRESENTATION OF BIOME GROUP

Passioned by sustainable development, Ahmed ERNEZ, Chairman and CEO of the group Biome Solar Industry, writes with his team a success story in renewable energies. In partnership with the German manufacturer of thermal solar collectors KBB which was then relocated to Béja to be a part of the Group, BSI designs and manufactures a diverse range of Solar water heaters helping to save the environment and adapted to the requirements of each single market. Biome Solar Industry reaches technological maturity by setting up an industrial enamelling unit in Africa according to international standards. This strategy allows it to establish a solid and long-lasting network that spreads the KW's culture on an international scale, To day BSI is establishing itself internationally by exporting its products to 5 continents. In addition to that, in the context of corporate social responsibility (CSR) and according to its sustainable development strategy, BSI has set up a solar energy training center on its industrial site, in the context of a Public-Private partnership(PPP) with GIZ. These technical and human efforts were crowned in 2015 in Marseille with the 2015 EDILE inclusive investment trophy: Economic impact awarded to BSI by ANIMA Investment Network.



SOLAR TANK

Insulation and dressing

The tank has a polyurethane foam coating with a thickness of 50mm and a pre-lacquered sheet metal cladding giving it excellent thermal insulation. The ends of the tank are equipped with two

Anti-corrosion protection

The tank is protected against corrosion by a mineral coating of 4mm thickness and a magnesium anode according to

Electrical booster and accessories

It is possible to integrate an electric backup with a stainless steel heater. Our systems can also be equipped, if necessary, with a



STAINLESS STEEL TANK

316 L stainless steel tank
Withstands 14 bars pressure proof
Qualified welders
Mastered Welding process



SOLAR COLLECTOR

High quality frame

The aluminum frame is protected against corrosion
It is perfectly resistant to extreme weather (violent winds, hail)

High performance absorber

The highly selective MIROTHERM coating of the absorbent surface ensures mechanical stability at high temperatures and guarantees optimum performance

Perfect thermal insulation

The mineral wool, stable regardless of the temperature, avoids the thermal bridges and guarantees a maximum yield.



SOLAR WATER HEATER

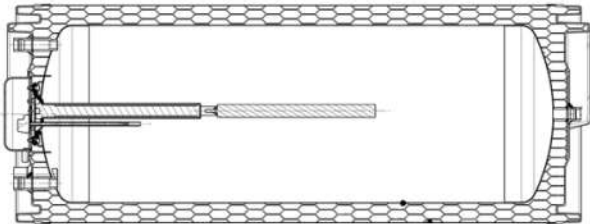


Management System
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2024-10-02
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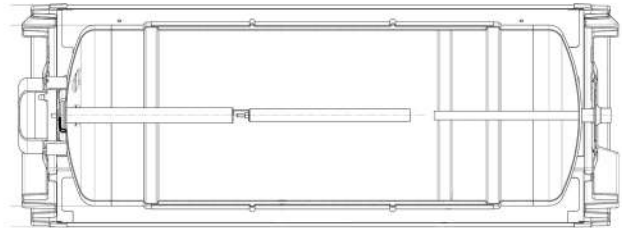
HOT WATER STORAGE TANK

DIRECT THERMOSIPHON



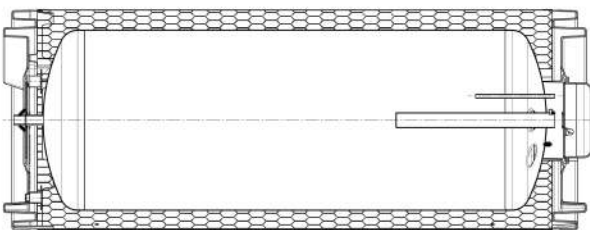
Enamelling consists of applying and then burning one or more enamel layers on one or both sides of a suitable steel object. The process of enamelling tanks has many stages: preparing the inner surface of the tank, preparing enamel solution, covering the inner surface with enamel solution, first firing at 140 °C to make the tank dry and only covered with enamel powder, Finally the last firing at 850 °C. Enamelling helps protect the inner surface of the hot water tank from corrosion. This protection system is completed by a sacrificial magnesium anode or imposed current anode. The imposed current anode is active only with a power supply.

DOUBLE JACKET



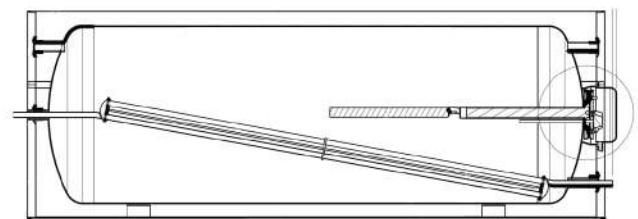
Double-jacket solar tanks are designed so that the solar hot water coming from the collectors circulate in the space between the two jackets. This second jacket covering the domestic water tank acts as a heat exchanger, this type of tanks is used in areas where the quality of water is bad and with a high risk of freezing.

STAINLESS STEEL



For a better resistance to corrosion, all our products are made from 316L stainless steel. All weldings are made with inert gas and passivated to eliminate all impurities and guarantee a longer lifetime.

TANK 500 EN



For a better stratification and a better space optimization, our 500L tanks are made to replace small combined systems. With a 3 mm thickness and a square shape, our 500L tank is easy to install and very resistant to weather changes. it can also be made with a submerged heat exchanger made from stainless steel to guarantee a longer lifetime.

Enamel



150 EM



200 EM



250 EM



300 EM



500 EM

COLLECTOR

Absorbor grate	Copper in Harpe 08 Tubes				
Tube diameter	15 mm	15 mm	15 mm	15 mm	15 mm
Collector diameter	22 mm	22 mm	22 mm	22 mm	22 mm
Absorbor Type	Aluminium				
Frame material	Aluminium profile anodized in one piece Aluminium sheet				
Frame thickness	75 mm profile				
Insulant thikness	Mineral wool 30 mm				
Glass quality	Special Solar glass tempered, clear and low iron content 3,2 mm				
Dimensions (mm)	1554 x 1035 x 77	1884 x 1035 x 77	3108 x 1035 x 77	3768 x 1035 x 77	5652 x 1035 x 77
Gross area	1,6 m ²	1,95 m ²	3,2 m ²	3,9 m ²	5,85 m ²
Aperture area	1,58m ²	1,84 m ²	3,16 m ²	3,68 m ²	5,52 m ²
Maximum working pressure	10 bars	10 bars	10 bars	10 bars	10 bars
Weight empty	29 kg	31 kg	52 kg	62 kg	93 kg
Absorber capacity	1,8 Litre	2,9 Litre	3,6 Litre	5,8 Litre	8,7 Litre

TANK

Nominal capacity	163 L	185 L	250 L	295 L	500 L
Integrated exchanger	no	no	no	no	no
Outside diameter	0,55 m	0,55 m	0,55 m	0,55 m	1953 x 700 x 700
Total length	1,25 m	1,5 m	1,775 m	2,1 m	2 m
Weight empty	45 kg	56 kg	68 kg	75 kg	160 kg
Weight filled	208 kg	241 kg	318 kg	370 kg	660 kg
Tank material	Steel for enamelling				
Inside covering	Enamel				
Corrosion protection	2 enamel layer + 2 magnesium anodes				
Maximum temperature	120 C°	120 C°	120 C°	120 C°	120 C°
Maximum pressure	14 Bars	14 Bars	14 Bars	14 Bars	14 Bars
External jacket material	Galvanized pre lacquered sheet with plastic film protection 0,6 mm				
Insulation material	Polyurethane foam 50 mm thickness				
Tank color	Grey, White, Yellow Sand				

WALL TANK



100 + ECH



150 + ECH



200 + ECH

TANK

Nominal capacity	100 L	163 L	185 L
Integrated exchanger	YES	YES	YES
Exchanger type		Tubular	
Fluid Capacity	0,8 L	1,25 L	1,5 L
Maximum Operating Pressure		7 bars	
Transfer Fluid		Water + Propylene Glycol	
Concentration		30%	
Outside diameter	0,51 m	0,51 m	0,51 m
Total length	0,9 m	1,25 m	1,5 m
Weight empty	30 kg	46 kg	56 kg
Weight filled	130 kg	209 kg	241 kg
Tank material		Steel for enamelling	
Inside covering		Enamel	
Anti-Corrosion protection		2 enamel layer + 2 magnesium anodes	
Maximum temperature	120 C°	120 C°	120 C°
Maximum pressure	14 Bars	14 Bars	14 Bars
External jacket material		Galvanized pre lacquered sheet with plastic film protection 0,6 mm	
Insulation material		Polyurethane foam 30 mm thickness	
Tank colour		Grey, White, Yellow Sand	

MODULAR TANK



MODULAR TANK 500 EX



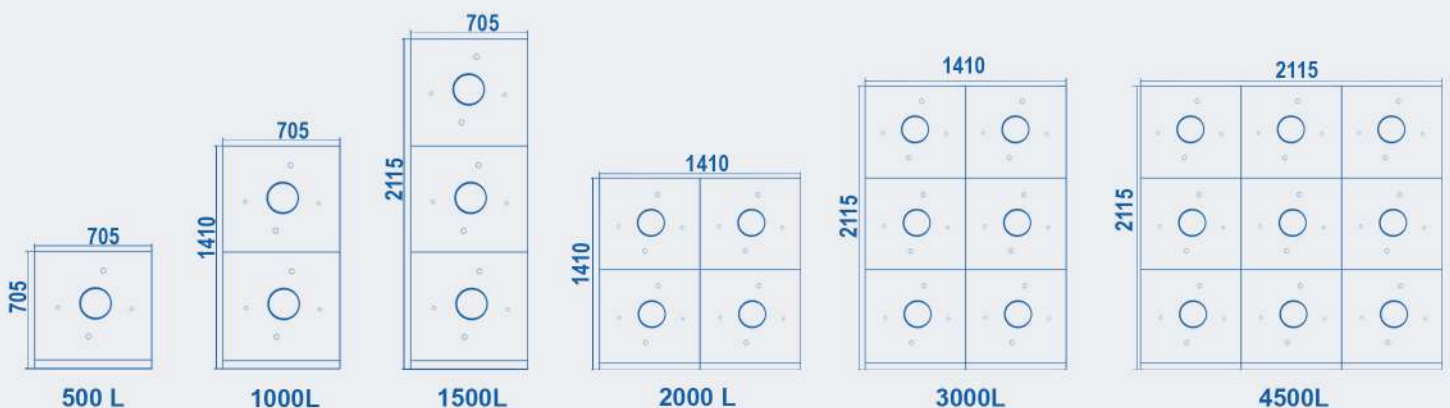
MODULAR TANK 500



BUFFER TANK 500

TANK

Nominal capacity	500 L	500 L	500 L
Integrated exchanger	YES	NO	NO
Exchanger type	Tubular	*****	*****
Fluid Capacity	2 L	*****	*****
Maximum Operating Pressure	7 bars	*****	*****
Transfer Fluid	Water + Propylene Glycol	*****	*****
Concentration	30%	*****	*****
Outside diameter	0,705 m x 0,705 m	0,705 m x 0,705 m	0,705 m x 0,705 m
Total length	2 m	2 m	2 m
Weight empty	165 kg	160 kg	160 kg
Weight filled	665 kg	660 kg	660 kg
Tank material	Low carbon Steel	Low carbon Steel	Low carbon Steel
Anti-Corrosion protection	2 enamel layer + 2 magnesium anodes	2 enamel layer + 2 magnesium anodes	*****
Maximum temperature	120 C°	120 C°	120 C°
Maximum pressure	14 Bars	14 Bars	14 Bars
External jacket material	Galvanized pre lacquered sheet with plastic film protection 1 mm		
Insulation material	Polyurethane foam 50 mm thickness		
Tank colour	Grey, White, Yellow Sand	Grey, White, Yellow Sand	Grey, White, Yellow Sand





Security group



Mounting Set



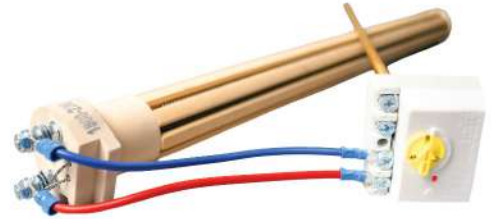
Inner Anode



Flange sealant



Flange Cap



Electrical back-up



Outer Anode



Hydraulic Set



Back-up pipe flange



Closed pipe flange



Support

ACCESSORIES

Double Jacket



100 DP



150 DP



200 DP



250 DP



300 DP

COLLECTOR

Absorbor grate	Copper in Harpe 08 Tubes				
Tube diameter	08 mm	08 mm	08 mm	08 mm	08 mm
Collector diameter	18 mm	18 mm	18 mm	18 mm	18 mm
Absorbor Type	Aluminium				
Frame material	Aluminium profile anodized in one piece Aluminium sheet				
Frame thickness	75 mm profile				
Insulant thikness	Mineral wool 30 mm				
Glass quality	Special Solar glass tempered, clear and low iron content 3,2 mm				
Dimensions (mm)	1364 x 1035 x 77	1554 x 1035 x 77	1884 x 1035 x 77	3108 x 1035 x 77	3768 x 1035 x 77
Gross area	1,41 m ²	1,6 m ²	1,95 m ²	3,2 m ²	3,9 m ²
Aperture area	1,3 m ²	1,58 m ²	1,84 m ²	3,16 m ²	1,84 m ²
Maximum working pressure	10 bars	10 bars	10 bars	10 bars	10 bars
Weight empty	24 kg	25 kg	29 kg	50 kg	58 kg
Absorber capacity	0,8 L	0,9 L	1,1 L	1,8 L	2,2 L

TANK

Nominal capacity	104 L	163 L	195 L	250 L	290 L
Integrated exchanger	non	no	no	no	no
Outside diameter	0,55 m	0,55 m	0,55 m	0,55 m	0,55 m
Total length	1,25 m	1,25 m	1,5 m	1,775 m	2,05 m
Weight empty	43 kg	64 kg	70 kg	86 kg	95 kg
Weight filled	147 kg	227 kg	264 kg	338 kg	382 kg
Tank material	Steel for enamelling				
Inside covering	Enamel				
Corrosion protection	2 enamel layer + 2 magnesium anodes				
Maximum temperature	120 C°	120 C°	120 C°	120 C°	120 C°
Maximum pressure	14 Bars	14 Bars	14 Bars	14 Bars	14 Bars
External jacket material	Galvanized pre lacquered sheet with plastic film protection 0,6 mm				
Insulation material	Polyurethane foam 45 mm				
Tank Color	Grey, White, Yellow Sand				



150 IN



200 IN



300 IN

COLLECTOR

Absorbor grate	Copper in Harpe 08 Tubes		
Tube diameter	15 mm	15 mm	15 mm
Collector diameter	22 mm	22 mm	22 mm
Absorbor Type	Aluminium		
Frame material	Aluminium profile anodized in one piece Aluminium sheet		
Frame thickness	75 mm profile		
Insulant thikness	Mineral wool 30 mm		
Glass quality	Special Solar glass tempered, clear and low iron content 3,2 mm		
Dimensions (mm)	1554 x 1035 x 77	1884 x 1035 x 77	1884 x 1035 x 77
Gross area	1,6 m ²	1,95 m ²	3,9 m ²
Aperture area	1,51 m ²	1,84 m ²	1,84 m ²
Maximum working pressure	10 bars	10 bars	10 bars
Weight empty	29 kg	31 kg	62 kg
Absorber capacity	1,8 L	2,9 L	5,8 L

TANK

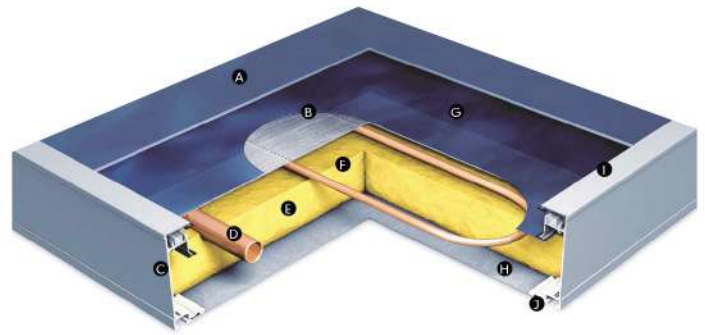
Nominal capacity	163 L	195 L	279 L
Integrated exchanger	no	no	no
Outside diameter	0,55 m	0,55 m	0,55 m
Total length	1,25 m	1,5 m	2,01 m
Weight empty	37 kg	42 kg	54 kg
Weight filled	200 kg	237 kg	333 kg
Tank material	Stainless steel 316L e= 1,2 mm		
Maximum temperature	120 C°	120 C°	120 C°
Maximum pressure	14 Bar	14 Bar	14 Bar
External jacket material	Galvanized pre lacquered sheet with plastic film protection 0,6 mm		
Insulation material	Polyurethane foam 50 mm		
Tank Color	Grey, White, Yellow Sand		

SOLAR COLLECTORS

Solar energy is



**an endless source
of energy**



K4 – The sophisticated collector system

- Excellent performance values, confirmed by Solar Keymark certificates
- Innovative and patented absorber suspension, optimized for aluminium and copper absorbers
- Aluminium frame profile formed from a single workpiece
- Aluminium frame natural or powder-coated in the RAL-colours anthracite and silver
- Multifunctional plastic caps for ventilation and drainage under the glazing bead and protection against damage

- A) Solar glass
- B) Aluminium absorber sheet
- C) Powder coated aluminium frame
- D) Manifold
- E) Thermal insulation
- F) Meander tube
- G) Highly selective absorber coating
- H) Rear plate made of aluminium
- I) Aluminium glazing bead
- J) Revolving groove for assembly

K4 collector – the sophisticated collector system

K4 collectors are available with different types of absorbers in the sizes 1.4 to 2.3 sqm net area. The installation of the panels can be done in various ways: On-roof, flat-roof, facade mounting gross and net area.

The collector frame consists of a single curved, extruded aluminium profile. A sea-water-proof aluminium alloy was selected as frame material for high stability.

The frame is available in mill finish aluminium or with a weather-resistant powder coating in the RAL-colors anthracite and silver. The aluminium glazing beads and the wide, circumferential, UV protected silicone sealing ensure secure glazing fastening and help to stabilise the collector.

An innovative ventilation and drainage design below the frame allows the collector to dry out very quickly, even with high levels of humidity.

Condensation on the glass panel is almost eliminated. The patented design of the absorber mounting guarantees that the absorber will remain in the correct position in all conditions.

The circumferential inner cover strip prevents output-reducing thermal bridges and chafing on the absorber surface. Well shaped, easy to replace corner covers prevent damage to the frame at low drop heights.





For the K7 collector, Efficient energy converter, but also convinces lots of thought. We managed to implement everything that you wanted in a collector with this new frame technology, and we did it in an efficient, chic, easy and clever way.

The collector can be obtained as a meander with manifold for forced circulation systems as well as a full harp with different pipe diameter for thermosiphon systems. That way the K7 covers the entire bandwidth of solar thermal systems and is used worldwide.

Efficiency and elegance combined



NO SHARP EDGES

To minimize injury risk and maximize attractiveness



ATTRACTIVE DESIGN

Slim appearance
A thin, shiny metallic curb in the inner space grants a noble look



HIGH PERFORMANCE

KBB is the expert in laser welding of absorbers. The pipe meander is continuously welded, thus also in the curves. This ensures optimum heat transfer.



PLASTIC CORNER CAPS

Shock protection, drainage of the first sealing level Attractive design.



OUTSTANDING GLASS STRIPS

Collectors can be visually pushed closer together than conventional frame collectors.

ABSORBERS

Laser-welded high-performance absorbers made of aluminium or copper

The computer optimized absorber design provides the best possible connection between the pipeline and the absorber plate as well as ideal heat conduction.

The strength of the laser welding connection between the aluminium or copper pipe and aluminium or copper sheet is ensured by 800-1000 weld spots per metre of welding seam. We guarantee the continuous quality of all our products through our own testing laboratory. Using our technical know-how and many years of manufacturing experience, we assist you in the development and implementation of your absorber.



Single meander (EM) with up to 3 collectors in series connection, low-flow up to 5.



Meander collector with manifolds (MS/LC) with up to 8 collectors in parallel connection, low-flow up to 10 collectors. K420-LC also suitable as drainback collector.



Full-harp (VH 2L) with up to 8 collectors in series connection, low-flow up to 10.



Double-harp collector (DH) with up to 6 collectors in series connection, low-flow up to 8.



Meander collector with manifolds (MS) with up to 10 collectors in parallel connection, low-flow up to 15 collectors.



Full-harp high (VH 4L) with up to 6 collectors in parallel, connection can also be used as thermosyphon collector.



All tests passed!

The K4, K7 collectors and mounting systems were successfully tested for compliance with EN 12975-1/2 at the Solar Energy Research (ISFH) in Hameln, Germany and have been awarded with Solar Keymark certificates.

Quality as the guiding principle

Continuously improving and modernising our manufacturing processes results in rising automation levels and enhanced quality.

The company has been certified in accordance with DIN EN ISO 9001 (quality management) and DIN EN ISO 14001 (environmental management) since 2004.

The collectors are certified in accordance with EN 12975 and the Solar Keymark programme regulations, and as per the Pressure Equipment Directive 97/23/EC (CE) and the SRCC standard OG100.



Packaging The solar panels are packed vertically on pallets to optimize storage and transportation costs.

Transport On request, we can arrange the transport for you and optimize the required loading space.



10 years of "real" warranty

- We guarantee that our products will be of the highest quality.
- We offer a 10 year manufacturer warranty for our collectors.
- We set standards in the market with our warranty policy.

Environment and recycling

The collectors of the K4 and K7 series are made entirely from environmentally friendly and recyclable materials. Attention was paid to easy recycling as early as at the development and design stages.

We therefore pledge today that your collectors will be taken back by us for recycling.



Our social commitment

passionate about advanced solar technology, but also about a world worth living in. We want to help children and young people build a promising future for themselves and support various children and youth foundations.




Think of the planet,







warm up with solar energy !

Technical Data K4

	K420-EM	K423-EM	K420-DH	K423-DH / AR
Type of construction	Simple meander with 12 mm tube		Double Harp with 10 to 12 riser tubes with 8 mm diameter and 2 manifolds with 18 mm diameter	
Measurement of the collector	1870 x 1150 mm	2160 x 1150 mm	1870 x 1150 mm	2160 x 1150 mm
Gross area	2,15 m ²	2,51 m ²	2,15 m ²	2,51 m ²
Height	75 mm		95 mm	
Aperture area (absorber)	2,0 m ²	2,3 m ²	2,0 m ²	2,3 m ²
Total Weight dry	34 kg	38 kg	34 kg	39 kg
Liquid content	1,73 l	2,0 L	1,13 L	1,3 L to 1,4 L
Efficiency η_0 (aperture)	80,3 %	80,3 %	80,1 %	78,1 % / 83,9 %
Heat loss coefficient a1 W/(m ² xK)	4,11	4,11	3,65	3,60 / 3,71
Heat loss coefficient a2 W/(m ² x	0,0133	0,0133	0,0172	0,0155
Max stagnation temperature	209 °C	209 °C	203 °C	201 °C / 213 °C
Absorber coating	highly selective		highly selective	
Absorption / Emission	95 % / 5 %		95 % / 5 %	
Covering	low Iron, structured, solar safety glass		low Iron, structured, solar safety glass / antireflection coating	
Transmission of covering	91 %		91 %	91 % / \geq 94 %
Hail resistance	passed test in compliance with EN 12975-2		passed test in compliance with EN 12975-2	
Nominal flow	80 l/h (low flow : 40 l/h)		100 l/h (low flow : 50 l/h)	
Nominal pressure loss	60 mbar (low flow: 30 mbar, mixed propylene glycol water / 20°C)		10 mbar (low flow: 5 mbar, mixed propylene glycol water / 20°C)	
Max. operation pressure	10 bar		10 bar	
Heat insulation	Mineral wool 30 mm		Mineral wool 50 mm	
Collector frame	powder-coated, silver or anthracite		powder-coated silver or anthracite	
Angle of inclination	15° - 90°		15° - 90°	
Permissible wind and snow load	3 kN/m ² suction, 4 kN/m ² pressure		3 kN/m ² suction, 5 kN/m ² pressure	
Recommended heat transfer fluid	Antifreeze mix based on propylene-glycol		Antifreeze mix based on propylene-glycol	
Collector connection	<p>2 pipe ends 12 mm for compression fittings</p> 		<p>2 connectors 1/2" male thread, flat sealing</p> 	

	K420-LC Drain Back	K414-VH-TS Thermosiphon	K416-VH-TS Thermosiphon	K420-VH-TS Thermosiphon
Type of construction	Simple meander with 9 mm tube and 2 manifolds with 18 mm tube.	Simple Harp with 6 riser tubes with 12 mm diameter and 2 manifolds with 18 mm diameter		Simple Harp with 6 riser tubes with 12 mm diameter and 2 manifolds with 18 mm diameter.
Measurement of the collector	1908 x 1058 mm	1408 x 1058 mm	1568 x 1058 mm	1908 x 1058 mm
Gross area	2,01 m ²	1,50 m ²	1,66 m ²	2,01 m ²
Height	75 mm		75 mm	
Aperture area (absorber)	1,86 m ²	1,40 m ²	1,53 m ²	1,86 m ²
Total Weight dry	29 kg	22 kg	25 kg	30 kg
Liquid content	1,3 l	1,3 l	1,4 l	1,6 l
Efficiency η_0 (aperture)	76,1 %	72 %*	72 %*	72 %*
Heat loss coefficient a1 W/(m ² xK)	4,04	3,95*	3,95*	3,95*
Heat loss coefficient a2 W/(m ² x	0,0127	0,015*	0,015*	0,015*
Max. stagnation temperature	208 °C*	199 °C*	199 °C*	199 °C*
Absorber coating	highly selective		highly selective	
Absorption / Emission	95 % / 5 %		95 % / 5 %	
Covering	low Iron, structured, solar safety glass		low Iron, structured, solar safety glass	
Transmission of covering	91 %		91 %	
Test passed	passed test in compliance with EN 12975-2		passed test in compliance with EN 12975-2	
Nominal flow	120 l/h (low flow: 50 l/h)		120 l/h (low flow: 50 l/h)	
Nominal pressure loss	90 mbar (low flow: 240 mbar, mixed propylene glycol water 20°C)		90 mbar (low flow: 240 mbar, mixed propylene glycol water 20°C)	
Max operation pressure	10 bar		10 bar	
Heat insulation	Mineral wool 30 mm		Mineral wool 30 mm	
Collector frame	Natural aluminum		Natural aluminum	
Angle of inclination	15° - 90°		15° - 90°	
Permissible wind and snow load	3 kN/m ² suction, 3 kN/m ² pressure		3 kN/m ² suction, 3 kN/m ² pressure	
Recommended heat transfer fluid	Antifreeze mix based on propylene-glycol		Antifreeze mix based on propylene-glycol	
Collector connection	<p>4 connections 18 mm</p>  <p>Compression fitting 18 mm</p>			 <p>Union nut ¾"</p>

	K420-VH	K423-VH	K420-MS	K423-MS
Type of construction	Simple Harp with 10 riser tubes with 8 mm diameter and 2 manifolds with 18 mm diameter		Simple meander with 9 mm tube and 2 manifolds with 22 mm tube	
Measurement of the collector	1870 x 1150 mm	2160 x 1150 mm	1870 x 1150 mm	2160 x 1150 mm
Gross area	2,15 m ²	2,51m ²	2,15 m ²	2,51m ²
Height	95 mm		95 mm	
Aperture area (absorber)	2,0 m ²	2,3 m ²	2,0 m ²	2,3 m ²
Total Weight dry	34 kg	39 kg	35 kg	39 kg
Liquid content	1,13 l	1,3 l	1,7 l	1,8 l
Efficiency η (aperture)	78,1 %		80,7 %	80,7 %
Heat loss coefficient a1 W/(m ² xK)	3,70		3,73	3,73
Heat loss coefficient a2 W/(m ² x	0,0141		0,0166	0,0166
Max. stagnation temperature	203 °C		202 °C	202 °C
Absorber coating	highly selective		highly selective	
Absorption / Emission	95 % / 5 %		95 % / 5 %	
Covering	low Iron, structured, solar safety glass		low Iron, structured, solar safety glass	
Transmission of covering	91 %		91 %	
Test passed	passed test in compliance with EN 12975-2		passed test in compliance with EN 12975-2	
Nominal flow	100 l/h (low flow:: 50 l/h)		120 l/h (low flow:: 50 l/h)	
Nominal pressure loss	10 mbar (low flow: 5 mbar, mixed propylene glycol water 20°C)		280 mbar (low flow: 90 mbar, water mixture propylene glycol 20°C)	310 mbar (low flow: 100 mbar, water mixture propylene glycol 20°C)
Max operation pressure	10 bar		10 bar	
Heat insulation	Mineral wool 50 mm		Mineral wool 50 mm	
Collector frame	powder-coated, silver or anthracite		powder-coated, silver or anthracite	
Angle of inclination	15° - 90°		15° - 90°	
Permissible wind and snow load	3 kN/m ² suction, 5 kN/m ² pressure		3 kN/m ² suction, 5 kN/m ² pressure	
Recommended heat transfer fluid	Antifreeze mix based on propylene-glycol		Antifreeze mix based on propylene-glycol	
Collector connection	2 connectors, 4 connections 22 mm		4 connectors 22 mm	
				
	Flat-sealing screw	Compression fitting fitting 18 mm	Compression fitting	Plug connection with O-ring sealing

Technical Data K7

	K721-MS	K727-MS	K720-TS	K720-TX
Type of construction	Meander with 2 manifolds collector for on-roof and flat-roof installation as well as for free-standing		Simple Harp collector for thermosiphon systems for on-roof and flat-roof installation as well as for free-standing	
Measurement of the collector	1854 x 1135 mm	2344 x 1135 mm	1884 x 1035 mm	1884 x 1035 mm
Gross area	2,10 m ²	2,66 m ²	1,95 m ²	1,95 m ²
Height	77 mm		77 mm	
Aperture area (absorber)	1,98 m ²	2,52 m ²	1,84 m ²	1,84 m ²
Total Weight dry	32,5 kg	39 kg	29 kg	30 kg
Liquid content	1,5 l	1,7 l	1,1 l	2,1 l
Efficiency η_0 (aperture)	76,5 %	76,5 %	71,1 %	68,9 %
Heat loss coefficient a1 W/(m ² xK)	3,665	3,665	3,472	3,652
Heat loss coefficient a2 W/(m ² x	0,015	0,015	0,012	0,012
Max stagnation temperature	209 °C	209 °C	203 °C	201 °C / 213 °C
Absorber coating	highly selective		highly selective	
Absorption / Emission	95 % / 5 %		95 % / 5 %	
Covering	low Iron, structured, solar safety glass		low Iron, structured, solar safety glass/antireflection coating	
Transmission of covering	91,5 %		91,5 %	
Hail resistance	passed test in compliance with EN 12975-2		passed test in compliance with EN 12975-2	
Nominal flow	100 l/h (low flow: 50 l/h)		90 l/h (low flow : 40 l/h)	
Nominal pressure loss	225 mbar (low flow: 70 mbar, water mixture propylene glycol / 20°C)	280mbar (low flow: 90 mbar, water mixture propylene glycol / 20°C)	4 mbar (mbar (low flow: 2 mbar, water glycol mixture of propylene / 20°C)	
Max. operation pressure	10 bar		10 bar	
Heat insulation	Mineral wool 30 mm		Mineral wool 30 mm	
Collector frame	Aluminium frame nature, Powder-coated glass strip		powder-coated silver or anthracite	
Angle of inclination	15° - 75°		15° - 75°	
Permissible wind and snow load	3 kN/m ² suction, 3 kN/m ² pressure		3 kN/m ² suction, 3 kN/m ² pressure	
Recommended heat transfer fluid	Antifreeze mix based on propylene-glycol		Antifreeze mix based on propylene-glycol	
Guarantee	10 years		10 years	

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	K716-TS-D12	K720-TS-D12	K716-TS-D15	K720-TS-D15
Type of construction	Flat-plate collector for thermosiphon systems for on-roof and flat-roof installation as well as for free-standing		Flat-plate collector for thermosiphon systems for on-roof and flat-roof installation as well as for free-standing	
Measurement of the collector	1564 x 1035 mm	1884 x 1035 mm	1564 x 1035 mm	1884 x 1035 mm
Gross area	1,62 m ²	1,95 m ²	1,62 m ²	1,95 m ²
Height	77 mm		77 mm	
Aperture area (absorber)	1,52 m ²	1,84 m ²	1,52 m ²	1,84 m ²
Total Weight dry	29,5 kg	30 kg	29,5 kg	31 kg
Liquid content	1,9 l	2,1 l	2,5 l	2,9 l
Efficiency η_0 (aperture)	68,9 %		69,5 %	
Heat loss coefficient a1 W/(m ² xK)	3,652		3,796	
Heat loss coefficient a2 W/(m ² x	0,012		0,011	
Max stagnation temperature	200 °C		200 °C	
Absorber coating	highly selective		highly selective	
Absorption / Emission	95 % / 5 %		95 % / 5 %	
Covering	low Iron, structured, solar safety glass		low Iron, structured, solar safety glass / antireflection coating	
Transmission of covering	91,5 %		91,5 %	
Hail resistance	passed test in compliance with EN 12975-2		passed test in compliance with EN 12975-2	
Nominal flow	100 l/h (low flow: 50 l/h)		90 l/h (low flow: 40 l/h)	
Nominal pressure loss	225 mbar (low flow: 70 mbar, water mixture propylene glycol / 20°C)	280 mbar (low flow: 90 mbar, water mixture propylene glycol / 20°C)	4 mbar (low flow: 2 mbar, water glycol mixture of propylene / 20°C)	
Max. operation pressure	10 bar		10 bar	
Heat insulation	Mineral wool 30 mm		Mineral wool 30 mm	
Collector frame	Aluminium frame nature, Powder-coated glass strip		powder-coated silver or anthracite	
Angle of inclination	15° - 75°		15° - 75°	
Permissible wind and snow load	3 kN/m ² suction, 3 kN/m ² pressure		3 kN/m ² suction, 3 kN/m ² pressure	
Recommended heat transfer fluid	Antifreeze mix based on propylene-glycol		Antifreeze mix based on propylene-glycol	
Guarantee	10 years		10 years	

BIOME GROUP worldwide versus different climatic challenges



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Lebanon

La Tunisie



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Manar I



Manar II



Gammart



Tunis



Gammart



Berge du Lac



Berge du Lac



Tunis

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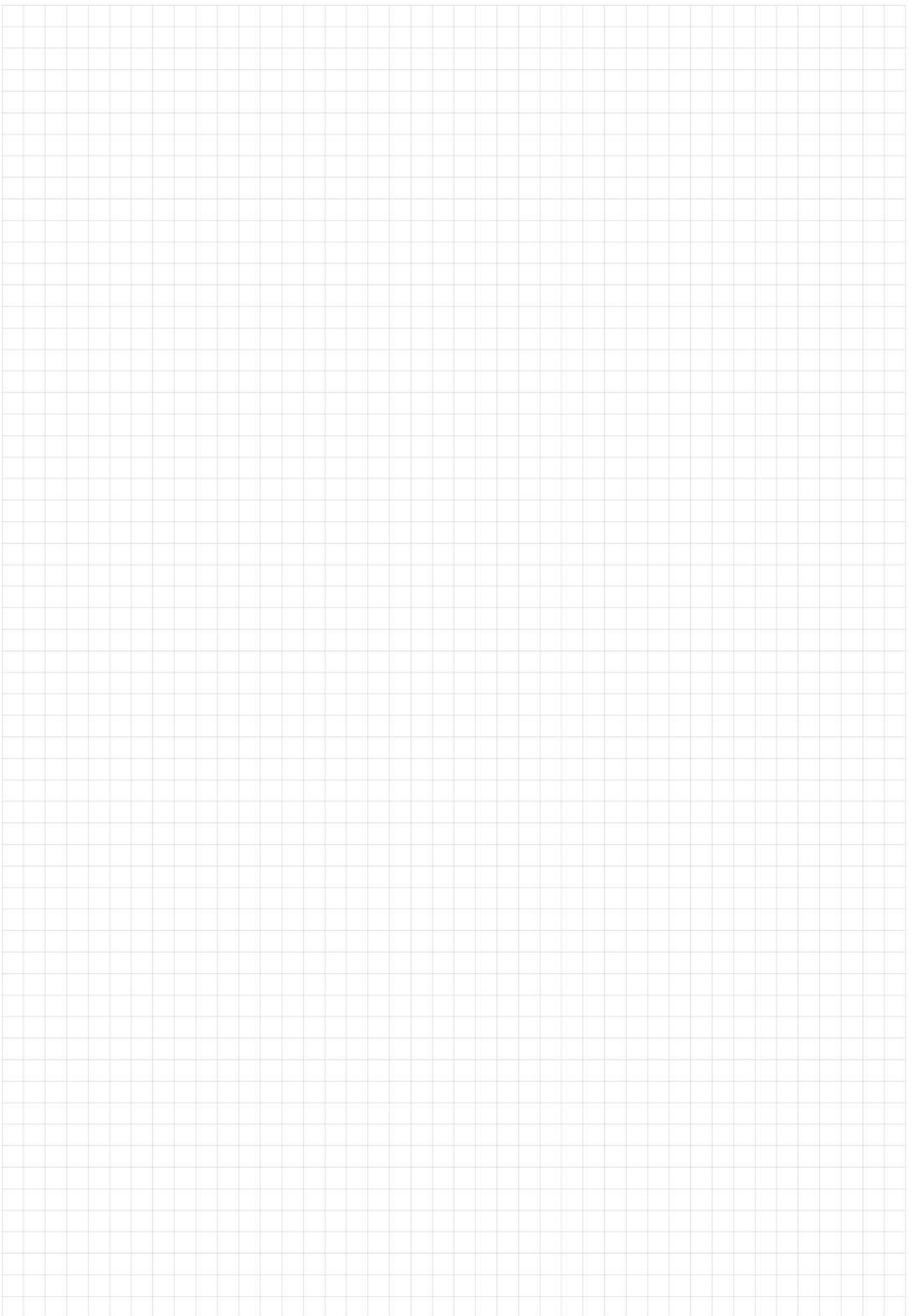


Ait Yaazem





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www.biome-solar.com
www.kbbsolar.com

 Biome Solar Industry



Zone industrielle Béja Nord,
Route de Nefza-9000 Béja,
TUNISIE
Tél : (+216) 78 440 440
Fax : (+216) 78 440 440



Zone industrielle Béja Nord,
Route de Nefza-9000 Béja,
TUNISIE
Tél : (+216) 78 449 011
Fax : (+216) 78 449 014