

# OKU Solar Heating – Let the sun do the work!





# OKU – solar heating for swimming pools

The problem is all too familiar. An outdoor, unheated swimming pool, will reach its ideal swimming temperature for only three or four weeks in the peak of summer. That is a very short time, when you think of the investment and maintenance you put into it.

An indoor swimming pool has to be heated all year round, even in the middle of summer. Heating a swimming pool using conventional means of energy can be costly and also has an impact on the environment. That is why solar energy is

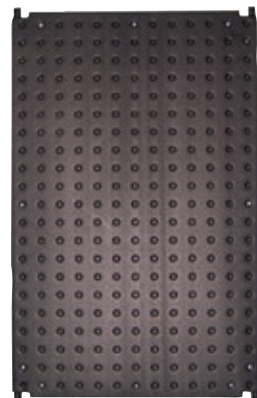


the best solution. OKU solar panels are specifically designed for this application. Heatseeker OKU solar heating provides maximum efficiency and the right temperature for your swimming pool.

Enjoy a warm and comfortable pool temperature with Heatseeker OKU solar heating. It is a rewarding investment that is powered by the sun's free energy and it is your contribution to protecting the environment.



- Item no. 1000
- integrated collecting pipe dia. 40 mm
  - two couplings dia. 25mm
  - length 1320 mm
  - width 820 mm
  - 1.08 m<sup>2</sup>



- Item no. 1001
- with four couplings dia. 25 mm
  - length 1280 mm
  - width 820 mm
  - 1.05 m<sup>2</sup>



- Item no. 1002
- with 2 integrated collecting pipe dia. 40 mm
  - length 1360 mm
  - width 820 mm
  - 1.12 m<sup>2</sup>



## OKU solar panels, made of high density polyethylene, offer the right foundation for operating such installations.

### OKU-solar-panel

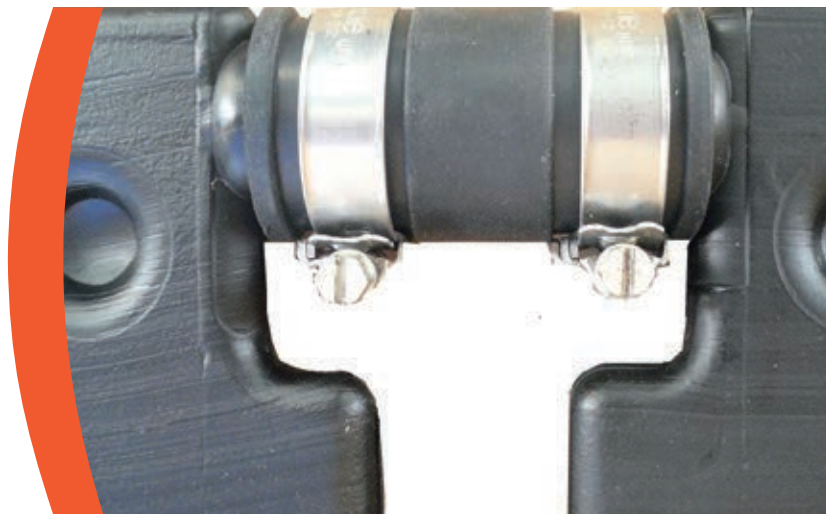
Low pressure drop	approx. 0.003 bar at 200 l/h/m <sup>2</sup>
Flow rate	50 to 250 l/m <sup>2</sup> /h
Molded in one piece	homogeneous black
Weight	approx. 6 kg/m <sup>2</sup> - water content 6 l/m <sup>2</sup>
Testing pressure	4.5 bar at NT
Working pressure	up to 1.2 bar - 40°C
Efficiency	up to approx. 80% - power up to 0.8 kWh/m <sup>2</sup>
	output 4 - 5 kWh/m <sup>2</sup> per day
Average value	0.5 to 0.6 kWh/h/m <sup>2</sup>
Temperature-resistant	from -50 to + 115°C



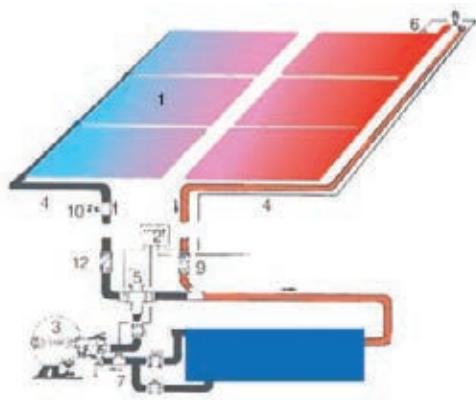
TUV-checked



- Operation often possible with existing filter pump
- Non-corroding – resistant to swimming-pool water
- Pool water pumped direct through panel
- Idling-proof
- Full - area through - flow - frost - resistant - supports human weight

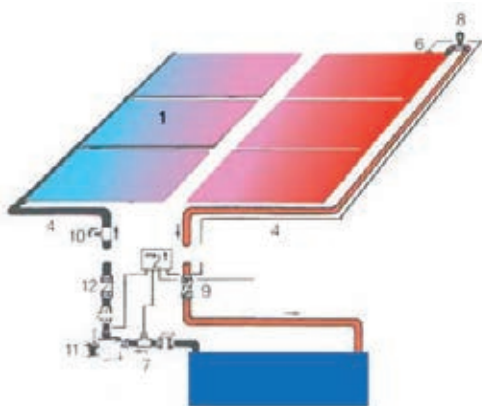


## Different configurations of OKU solar heating installations



### Operation with independant pump and controller

This configuration is the most common. The system operates independantly to the filtration system and is controlled by a stand-alone automatic controller. The controller turns on the solar pump when the temperature on the roof is higher than the water temperature, allowing the water to flow through the panels and then back to the pool.



### Operation with motorized three way valve

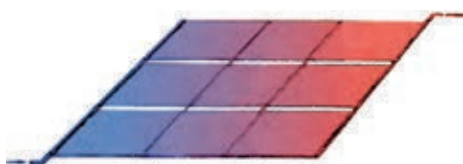
This configuration can usually be selected if the panels are installed lower than 6m above the surface of the water. The motorized three way valve is integrated into the filtration system. The three way valve turns when the temperature on the roof is higher than the water temperature, allowing the water to be diverted through the panels and then back to the pool.

### The components

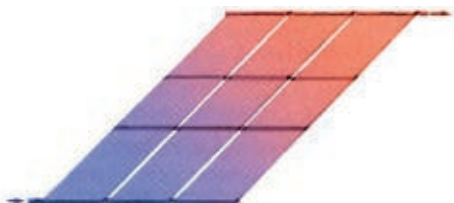
- |   |                             |    |                         |
|---|-----------------------------|----|-------------------------|
| 1 | OKU panel                   | 7  | Pool temperature sensor |
| 2 | Solar controller            | 8  | Vacuum relief valve     |
| 3 | Filter                      | 9  | Two way valve           |
| 4 | Solar flow and return lines | 11 | Solar pump              |
| 5 | Motorized three way valve   | 12 | Non-return valve        |
| 6 | Roof temperature sensor     |    |                         |



## Technical details for OKU swimming pool solar heating systems:



Horizontal installation



Vertical installation



Solar Pump



Aqua-Gen 3 Solar Controller

The water of the swimming pool can flow through the OKU solar panels in either direction, so they can be mounted both lengthwise and side by side. The individual rows of panels are connected on a Tichelmann principle (same routes for each row). It is not advisable to connect more than seven panels in series.

### Design

Recommended number of panels according to pool volume (m<sup>3</sup>) for outdoor pools with a pool cover (September to April).

Temperature increase 7-10°C compared to unheated swimming pools.

Pool volume (m <sup>3</sup> )	Number of panels required for direction of inclination				
	E	NE	N	NW	W
90	36	32	30	30	32
80	32	29	26	26	29
70	28	25	23	23	25
60	24	22	20	20	22
50	20	18	16	16	18
40	16	14	13	13	14
30	12	11	10	10	11
20	08	07	07	07	07
10	04	04	04	04	04

The panel quantity should be increased by 50% if there is no pool cover. The regionally different number of sunshine hours can be allowed for by adding or deducting up to 20% panel area. Please refer to a consultant for further information.

### Pump performance

The flow rate should be 150 to 250 l/m<sup>2</sup> panel per hour. The required type of pump is easy to determine. The delivery rate is calculated from the absorber area x 200 l. The delivery head is the difference in height between the water level and the panel plus approx. 5m.

### System Benefits

- Cockatoo proof
- Hail Proof
- Compact panel size
- Easy handling
- Ground, frame or roof mounted
- Flexible connections
- High thermal efficiencies
- German technology

## Contact

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