

BADU®BK 250 and BADU®BK 370 **Солнечные панели (коллекторы) для бассейнов**



BADU solar panels are ideal for heating up your pool water using cost-free solar power. Enjoy the first rays of the sun basking in your pleasantly heated swimming pool! No environmental pollution by carbon dioxide!

A few years' saved energy costs will compensate for the price of this unit, because **solar power is for free!**

Adequate solar irradiation will have noticeably raised the temperature of the water when it returns to the pool.

The solar panel system can be controlled very easily by means of stop valves: as soon as the air is hotter than the pool water, the solar panels are switched off in no time at all; in midsummer switching off the solar panels will avoid excessive heating of the pool water.

The filtered pool water flows without important friction losses via the solar panels in bypass arrangement and returns to the pool heated up by solar irradiation during the process. The water is mostly conveyed by the circulation pump which is part of every filter unit.

Article no.

Description

250.2000.000 Solar panel BADU BK 250

250.4000.000 Aluminium frame for BADU BK 250

250.1000.000 Solar panel BADU BK 370

250.3000.000 Aluminium frame for BADU BK 370

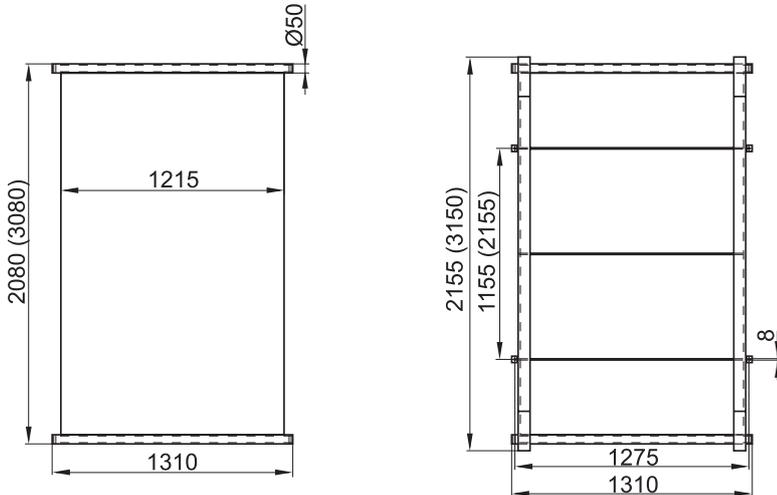
BADU® BK 250 and BADU® BK 370 Solar panels for swimming pools

Dimensioned drawing

Dimensions in mm

Dimensions in brackets for BADU BK 370

Possible dimensional tolerances ± 1%.

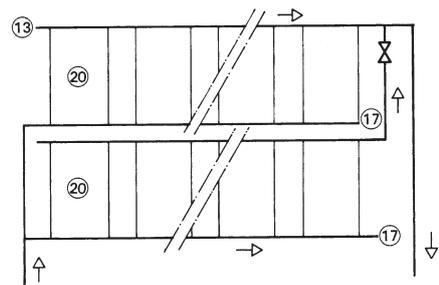
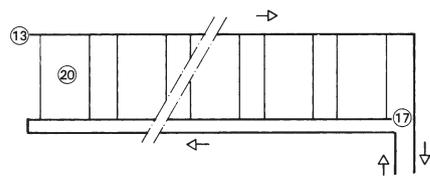
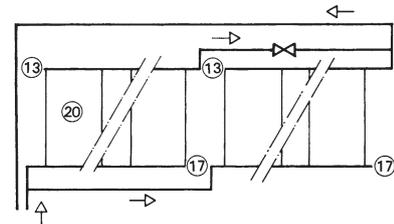
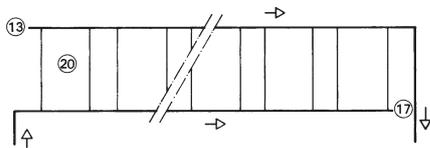


Zeichnungs-Nr.: 25.0.001

Solar panel separate

Solar panel in aluminium frame

Lateral view



Zeichnungs-Nr.: 25.0.008.1

Zeichnungs-Nr.: 25.0.007.1

Installation example solar panels in two banks

(per group max. 10 panels)

- 20 BADU solar panel for swimming pool
- 17 End plug
- 13 Ventilation valve

Computing of the delivery head (H_{total})

H_{total} = Difference between water level and highest point of the panels, plus resistance inside panels, pipes, fittings and other individual resistances (filter, backwash valve, nozzles etc.)

BADU®BK 250 and BADU®BK 370

Solar panels for swimming pools

Hints how to compute the panel surface:

In Central Europe the panel surface should correspond to the pool surface in size.

If you use a cover in order to minimize the loss of heat, the surface of the panels will be reduce to **70%** of the pool surface.

Computation example:

Pool 4 x 8 m (32 m² pool area)

$$\text{No. of panels} = \frac{\text{pool area}}{\text{panel surface}} = \frac{32,0 \text{ m}^2}{3,70 \text{ m}^2} = 8,65 \times 0,7 (70\%) = 6,06 = 6 \text{ pieces}^*)$$

*) With the exampel above you are able to calculate the number of required panels.

In this calculation we have determined a required number of 6 panels of the BADU BK 370 type.

	BADU	BK 370	BK 370 R	BK 250	BK 250 R
Technical data					
Surface (m ²)		3,70	3,70	2,50	2,50
Weight empty (kg)		9	17	7	12
Weight filled with water (kg)		19	27	13	18
Operational pressure (bar) max.		1,50	1,50	1,50	1,50
Delivery (l/h)		1000	1000	750	750
Headers with socket connection (mm)		50	50	50	50
Flow resistance (m) with 4 panels		0,14	0,14	0,14	0,14
Flow resistance (m) with 6 panels		0,40	0,40	0,40	0,40
Flow resistance (m) with 8 panels		0,90	0,90	0,90	0,90
Flow resistance (m) with 10 panels		1,70	1,70	1,70	1,70

R = with frame

Max. 10 panels can be installed in one bank.

BADU®BK 250 and BADU®BK 370

Computation example^{*)} to demonstrate cost-efficiency

BADU®BK solar panel for an outdoor swimming pool

Initial situation:

Pool surface:	32 m ²
Pool volume:	45 m ³
Desired water temperature:	ca. 24°C

- Outdoor pool with protection cover to minimize heat loss
- Bathing season from May to September
- Heat required during this time amounts to 16.000 kWh

Required panel surface:

In order to compute the required panel surface, the pool surface, the existence of a pool cover, the direction and the inclination of the solar panels are determining factors.

$$32 \text{ m}^2 \times 0.7 \times 1.2 = \text{ca. } 27 \text{ m}^2$$

Price of solar panels, incl. assembly and control technology:

ca. 4.500.-- €

Costs for using an oil-fired heating system instead of BADU®BK:

Approx. 1.600.-- € / year

A BADU®BK unit will have paid off in less than three years.

^{*)} The computation of this example is based on the fuel price of 0.85 €/l in June 2008, a southward direction and a horizontal inclination of 60°. Pool surface x correction factor pool cover x correction factor direction / inclination = required panel surface.

All assembly work must be done by a company specialized in swimming pool technology.

The user has to provide materials specially required for the assembly.

The total costs given above are an estimated guideline value based on information from installation companies.

BADU®BK 250 and BADU®BK 370

Solar panel sets for swimming pools

NEW!



From now on our solar panels are available in sets. These include the required amount of solar panels as well as appropriate accessories. Thus, without losing much time computing your unit, you will have your pool water heated by free solar power as quickly as possible.

Included:

Solar panels BADU BK 250 respectively BADU BK 370 Panel connectors with hose clamps

End plugs

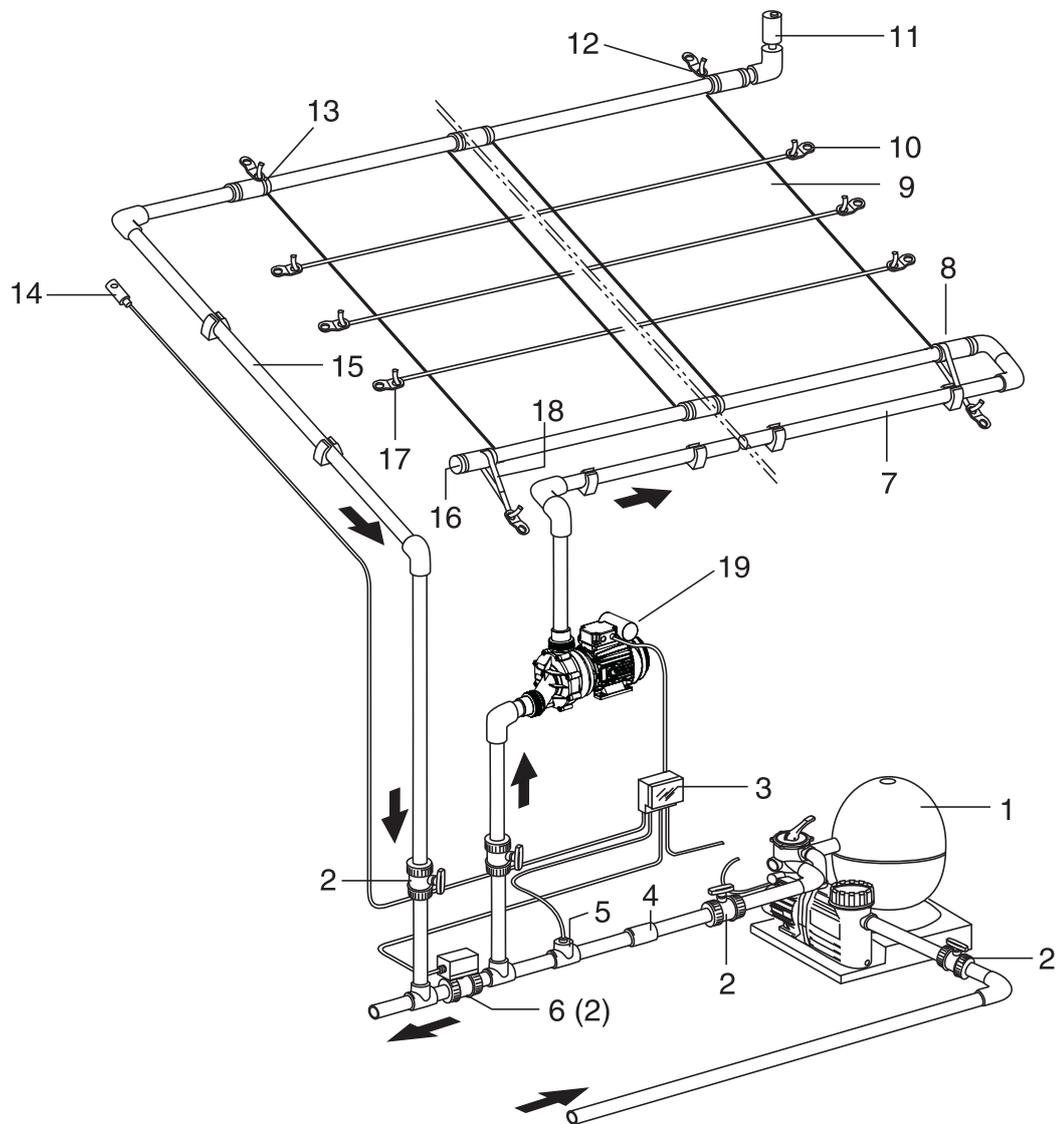
Vent unit with elbow

Plastic double eyelet

Polyester tape

Article no.	Description
250.2020.000	Solar Panel set, 2 x BK 250 with accessories
250.2030.000	Solar Panel set, 3 x BK 250 with accessories
250.2040.000	Solar Panel set, 4 x BK 250 with accessories
250.1020.000	Solar Panel set, 2 x BK 370 with accessories
250.1030.000	Solar Panel set, 3 x BK 370 with accessories
250.1040.000	Solar Panel set, 4 x BK 370 with accessories

Sample installation for solar panels **BADU®BK 250** and **BADU®BK 370**



Zeichnungs-Nr.: 25.0.006.1

- 1 Filter unit with pump
- 2 Ball valve
- 3 Switch box
- 4 Non-return valve
- 5 T-section for water sensor
- 6 Actuator or ball valve
- 7 Pipe to solar panel
- 8 Inlet solar panel
- 9 BADU solar panel BK
- 10 Double eyelet
- 11 Vent unit
- 12 Panel connectors
- 13 Outlet solar panel
- 14 Solar sensor
- 15 Return pipe
- 16 End plug
- 17 Long polyester tape
- 18 Short polyester tape
- 19 Additional pump (optional)

BADU® BT 20 D - BADU® BT 3 D/2

Temperature difference control units - Accessories for swimming pool solar panels

The temperature difference control units BADU BT can be additionally installed for automatic activation and deactivation of the solar panel system. Their operation depends on the water temperature required, solar irradiation as well as the operating time. They replace manual control via valves.



BADU BT 20 D

- Ideal for retrofitting existing filter units.
Temperature difference control through
- Sun sensor FS for panels (10 m cable)
 - Pool water temperature sensor FB inside immersion sleeve (5 m cable)
 - 2-way ball valves LH 50 with actuator 1~ 24 V

Note:*)
For BT 1 D you can use:
BT 20 D without ball valve.



BADU BT 3 D/2

- Filter control BADU BT 3 D/2 with temperature control for domestic heating unit and integrated temperature difference control unit
- Control via digital timer
 - Separate temperature control of solar and domestic heater circuits
 - with overriding control for solar energy

Article no.

Description

250.0202.000	Temperature difference control BADU BT 20 D with 2 sensors*)
250.0200.000	Temperature difference control BADU BT 20 D with 2 sensors and 2-way ball valve LH 50 with actuator 1~ 24 V
250.0400.000	Temperature difference control BADU BT 3 D/2 with timer, 2 sensors and 2-way ball valve LH 50 with actuator 1~ 24 V

Accessories for solar panels **BADU®BK**



Соединительные элементы



Заглушка



Крепёжная лента



Вентиляционный блок



Двойное ушко (крепёж)



Elbow



Электрозатвор

Article no.	Description
250.0001.000	Panel connectors with two stainless steel hose clamps d 50 mm
250.0002.000	End plug of PVC d 50
250.0003.000	Polyester tape 0,80 m long
250.0004.000	Polyester tape 1,60 m long
250.0005.000	1 roll polyester tape 50 m
250.0006.000	Plastic double eyelet
250.0007.000	Vent unit R ³ / ₈
250.0008.000	Elbow for vent unit, with connection piece d 50 / connection thread Rp ³ / ₈
250.5100.000	Repair-Set II: cartridge with sealing compound (PU-basis)*)
250.0012.700	2-way ball valve LH 50 with actuator, 1~ 24 V

*) Flexible sealant for smaller repair jobs on the solar panel.