

# PS600 BADU Top12



## Solar Operated Centrifugal Surface Pump

### Characteristics

- flow rate up to 15 m<sup>3</sup>/h
- maintenance-free thanks to brushless DC motor
- excellent efficiency

### Application

- swimming pool water circulation through a filter system and thermal collectors
- pond management
- irrigation
- aquariums
- etc.

### Components

#### Pump End (PE) BADU Top 12

- monoblock-type pump with integrated strainer tank
- bellow mechanical seal is mounted on a plastic shaft protected sleeve
- motor/pump shaft has no contact with fluid
- total electric separation
- strainer capacity approx. 3 l
- strainer basket mesh size approx. 3.2 x 2.6 mm

#### Material Used For Pump End

- pump casing, strainer basket: PP
- flange, gland housing: PP TV 40
- diffuser: PP TV 40
- impeller: PA 66 GF 30 / PC
- lid: PC, transparent
- mechanical seal: carbon / ceramic / NBR
- bolts: steel, galvanized

#### Motor ECDRIVE 600 BADU Top

- brushless, maintenance-free DC motor

#### Controller PS600

- controlling of the pump system and monitoring of the operating states
- mounted at surface (no submerged electronic parts)
- two control inputs for well probe (dry running protection), float or pressure switches, remote control etc.
- automatic reset 20 minutes after well probe turns pump off
- protected against reverse polarity, overload and high temperature
- speed control, max. pump speed adjustable to reduce flow rate to approx. 30 %
- solar operation: integrated MPPT (Maximum Power Point Tracking)
- battery operation: low voltage disconnect and restart after battery has recovered
- max. efficiency 92 % (motor + controller)

### Warranty

Two years manufacturer's warranty against defects in material and workmanship

Pump System	PS600 BADU Top 12
article #	2921
controller	PS600
motor	ECDRIVE 600 BADU Top
pump end (PE)	BADU Top 12 (manufacturer Speck-Pumps)
source of energy (not contained in delivery)	solar generator (340-900 Wp) battery DC source



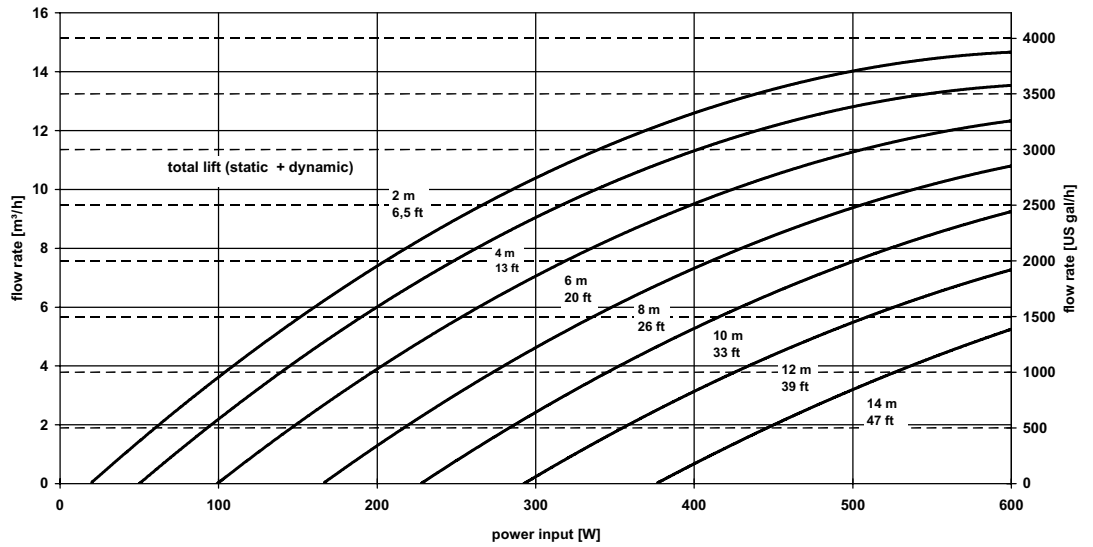
**System Sizing Table  
Solar Operation**

solar generator: nominal voltage 48-  
72 V DC, open circuit voltage max.  
150 V DC

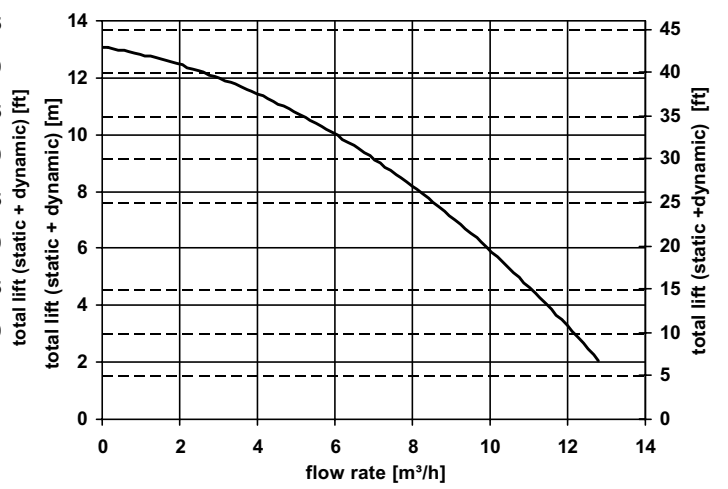
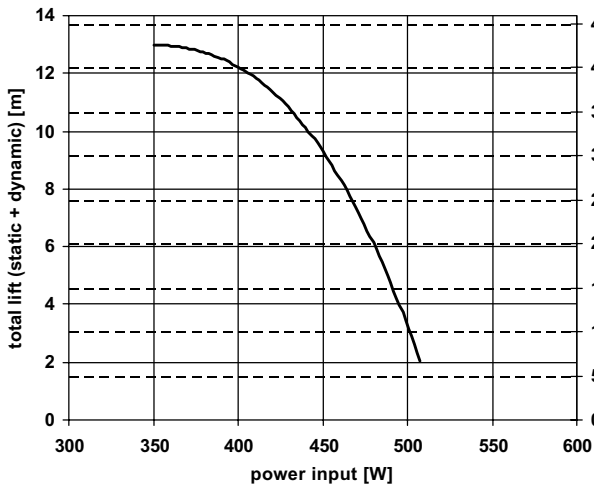
**Basis Of Calculation:** The power output of the solar generator is reduced by 17 % (degradation caused by ageing, dust, temperature influences etc. is taken into account). 10 sun hours per day

total lift (static+ dynamic) [m / ft]	Solar-Generator [Wp]	irradiation [KWh/m²/day]	Solar-Generator none tracked				Solar-Generator singleaxis tracked		
			flow rate		flow rate		flow rate		
			[m³/day]	[US gal/day x 1000]	[Imp. gal/day x 1000]	[m³/day]	[US gal/day x 1000]	[Imp. gal/day x 1000]	
2 / 6,5	340	4.5	54.0	14.3	11.9	76.7	20.3	16.9	
		6.0	70.0	18.5	15.4	105.0	27.7	23.1	
		7.5	82.0	21.7	18.0	131.2	34.7	28.9	
	400	4.5	61.0	16.1	13.4	86.6	22.9	19.1	
		6.0	78.0	20.6	17.2	117.0	30.9	25.7	
		7.5	92.0	24.3	20.2	147.2	38.9	32.4	
	480	4.5	71.0	18.8	15.6	100.8	26.6	22.2	
		6.0	90.0	23.8	19.8	135.0	35.7	29.7	
		7.5	105.0	27.7	23.1	168.0	44.4	37.0	
	600	4.5	85.0	22.5	18.7	120.7	31.9	26.6	
		6.0	105.0	27.7	23.1	157.5	41.6	34.6	
		7.5	120.0	31.7	26.4	192.0	50.7	42.2	
	720	4.5	95.0	25.1	20.9	134.9	35.6	29.7	
		6.0	117.0	30.9	25.7	175.5	46.4	38.6	
		7.5	129.0	34.1	28.4	206.4	54.5	45.4	
	4 / 13	340	4.5	27.0	7.1	5.9	38.3	10.1	8.4
			6.0	43.0	11.4	9.5	64.5	17.0	14.2
			7.5	56.0	14.8	12.3	89.6	23.7	19.7
400		4.5	36.0	9.5	7.9	51.1	13.5	11.2	
		6.0	52.0	13.7	11.4	78.0	20.6	17.2	
		7.5	67.0	17.7	14.7	107.2	28.3	23.6	
480		4.5	46.0	12.2	10.1	65.3	17.3	14.4	
		6.0	65.0	17.2	14.3	97.5	25.8	21.4	
		7.5	80.0	21.1	17.6	128.0	33.8	28.2	
600		4.5	60.0	15.9	13.2	85.2	22.5	18.7	
		6.0	80.0	21.1	17.6	120.0	31.7	26.4	
		7.5	97.0	25.6	21.3	155.2	41.0	34.1	
720		4.5	73.0	19.3	16.1	103.7	27.4	22.8	
		6.0	94.0	24.8	20.7	141.0	37.3	31.0	
		7.5	108.0	28.5	23.8	172.8	45.7	38.0	
6 / 20		340	4.5	10.0	2.6	2.2	14.2	3.8	3.1
			6.0	24.0	6.3	5.3	36.0	9.5	7.9
			7.5	36.0	9.5	7.9	57.6	15.2	12.7
	400	4.5	17.0	4.5	3.7	24.1	6.4	5.3	
		6.0	33.0	8.7	7.3	49.5	13.1	10.9	
		7.5	47.0	12.4	10.3	75.2	19.9	16.5	
	480	4.5	26.0	6.9	5.7	36.9	9.8	8.1	
		6.0	44.0	11.6	9.7	66.0	17.4	14.5	
		7.5	60.0	15.9	13.2	96.0	25.4	21.1	
	600	4.5	40.0	10.6	8.8	56.8	15.0	12.5	
		6.0	61.0	16.1	13.4	91.5	24.2	20.1	
		7.5	77.0	20.3	16.9	123.2	32.5	27.1	
	720	4.5	52.0	13.7	11.4	73.8	19.5	16.2	
		6.0	75.0	19.8	16.5	112.5	29.7	24.7	
		7.5	91.0	24.0	20.0	145.6	38.5	32.0	
	8 / 26	340	4.5						
			6.0	6.0	1.6	1.3	9.0	2.4	2.0
			7.5	17.0	4.5	3.7	27.2	7.2	6.0
400		4.5	3.0	0.8	0.7	4.3	1.1	0.9	
		6.0	13.0	3.4	2.9	19.5	5.2	4.3	
		7.5	26.0	6.9	5.7	41.6	11.0	9.2	
480		4.5	10.0	2.6	2.2	14.2	3.8	3.1	
		6.0	24.0	6.3	5.3	36.0	9.5	7.9	
		7.5	38.0	10.0	8.4	60.8	16.1	13.4	
600		4.5	20.0	5.3	4.4	28.4	7.5	6.2	
		6.0	39.0	10.3	8.6	58.5	15.5	12.9	
		7.5	56.0	14.8	12.3	89.6	23.7	19.7	
720		4.5	31.0	8.2	6.8	44.0	11.6	9.7	
		6.0	53.0	14.0	11.7	79.5	21.0	17.5	
		7.5	70.0	18.5	15.4	112.0	29.6	24.6	
10 / 33		600	4.5	7.0	1.8	1.5	11.2	3.0	2.5
			6.0	23.0	6.1	5.1	36.8	9.7	8.1
			7.5	39.0	10.3	8.6	62.4	16.5	13.7
	720	4.5	16.0	4.2	3.5	25.6	6.8	5.6	
		6.0	36.0	9.5	7.9	57.6	15.2	12.7	
		7.5	54.0	14.3	11.9	86.4	22.8	19.0	
12 / 39	600	4.5	1.0	0.3	0.2	1.6	0.4	0.4	
		6.0	10.0	2.6	2.2	16.0	4.2	3.5	
		7.5	24.0	6.3	5.3	38.4	10.1	8.4	
	720	4.5	6.0	1.6	1.3	9.6	2.5	2.1	
		6.0	20.0	5.3	4.4	32.0	8.5	7.0	
		7.5	37.0	9.8	8.1	59.2	15.6	13.0	
	900	4.5	17.0	4.5	3.7	27.2	7.2	6.0	
		6.0	37.0	9.8	8.1	59.2	15.6	13.0	
		7.5	50.0	13.2	11.0	80.0	21.1	17.6	
14 / 46	600	4.5							
		6.0	3.0	0.8	0.7	4.8	1.3	1.1	
		7.5	8.0	2.1	1.8	12.8	3.4	2.8	
	720	4.5							
		6.0	7.0	1.8	1.5	11.2	3.0	2.5	
		7.5	21.0	5.5	4.6	33.6	8.9	7.4	
	900	4.5	5.0	1.3	1.1	8.0	2.1	1.8	
		6.0	21.0	5.5	4.6	33.6	8.9	7.4	
		7.5	33.0	8.7	7.3	52.8	13.9	11.6	

**Chart: Solar Operation** solar generator: nominal voltage 48-72 V DC, open circuit voltage max. 150 V DC



**Charts: Battery Operation** battery, DC power supply: nominal voltage 48 V



total lift (static + dynamic)		flow rate			power input	current input
[m]	[ft]	[m³/h]	[US gal/h]	[Imp. gal/h]	[W]	[A]
2	6.6	12.8	3382	2816	507	10.6
3	9.8	12.3	3250	2706	502	10.5
4	13.1	11.4	3022	2516	496	10.3
5	16.4	10.6	2801	2332	489	10.2
6	19.7	9.9	2616	2178	480	10.0
7	23.0	9.2	2431	2024	471	9.8
8	26.2	8.2	2166	1804	464	9.7
9	29.5	7.2	1902	1584	454	9.5
10	32.8	6.0	1585	1320	443	9.2
11	36.1	4.8	1268	1056	426	8.9
12	39.4	3.0	793	660	406	8.5
13	42.7	0.0	0	0	350	7.3

## Technical Data

PS600 BADU Top 12	Solar operation	Battery operation
flow rate, max.	15 m <sup>3</sup> /h / 4,000 US Gal./h	13 m <sup>3</sup> /h / 3,400 US Gal./h
lift, max.	14 m / 46 ft	13 m / 43 ft
ambient temperature	-30° C to +45° C	
<b>Controller</b>		
input voltage	solar generator: nominal voltage 48 to 72 V DC open circuit voltage max. 150 V DC	battery, DC source: nominal voltage 48 V DC
type of enclosure	IP 54	
dimensions (net/packing)	395 x 175 x 165 mm / 450 x 250 x 240 mm (0,0270 m <sup>3</sup> )	
weight (nett/gross)	4.5 kg / 5.3 kg	
<b>Motor</b>		
	ECDRIVE 600 BADU Top	
power input, max.	600 W	
type of enclosure	IP X4	
class of insulation	F	
<b>Pump end</b>		
	BADU Top 12 (manufacturer Speck Pumps)	
suction, positive inlet lift, max.	3 m	
casing pressure, max.	2.5 bar	
water temperature, max.	60° C	
<b>Pump unit (motor + pump end)</b>		
dimensions (net/packing)	see drawing below / 520 x 220 x 350 mm (0,0400m <sup>3</sup> )	
weight (net/gross)	8.7 kg / 9.7 kg	

## Dimensions For Pump Unit (Motor + Pump End)

