Sun. Water. Life.

LORENTZ

PS600 CS-15-1

formerly PS600 BADU Top12

Solar-operated Centrifugal Surface Pump

Characteristics

- **flow rate up to 14 m³/h**
- **excellent serviceability**
- **maintenance-free DC motor thanks to brushless technology**
- **excellent efficiency**
- **short Return on Investment (ROI) cycle**
- **lower Total Cost of Ownership (TCO)**

Application

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

Warranty

- warranty: 2 years

  Details according to warranty issued by LORENTZ

Components

Pump End PE CS-15-1

- centrifugal 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 × 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 CS

- brushless, maintenance-free DC motor
- no electronics in the motor
- premium materials

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)

picture may differ from actual product

System Sizing Table: Solar-direct Operation

PV generator: max. power voltage (Vmp)*: > 68 V DC, open circuit voltage (Voc): max. 150 V DC, nominal voltage 48 – 72 V DC

TDH	PV generator	irradiation	flow rate					
			PV generator not tracked			PV generator single-axis tracked		
[m] / [ft]	[Wp]	[kWh/m²/day]	[m³/day]	[1,000 US Gal./day]	[1,000 Imp. Gal./day]	[m³/day]	[1,000 US Gal./day]	[1,000 Imp. Gal./day]
2 m 6.5 ft	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 m 13 ft	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 m 20 ft	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

TDH	PV generator	irradiation	flow rate					
			PV generator not tracked			PV generator single-axis tracked		
[m] / [ft]	[Wp]	[kWh/m²/day]	[m³/day]	[1,000 US Gal./day]	[1,000 Imp. Gal./day]	[m³/day]	[1,000 US Gal./day]	[1,000 Imp. Gal./day]
8 m 26 ft	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 m 33 ft	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 m 39 ft	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 m 46 ft	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

*) PV modules at standard test condition: AM = 1.5, E = 1,000 W/m², cell temperature: 25 °C

Basis of calculation

The power output of the PV generator is reduced by 17 % (degradation caused by ageing, dust, temperature influences etc. is taken into account).

Chart: Solar-direct Operation

PV generator: max. power voltage (Vmp)*: > 68 V DC, open circuit voltage (Voc): max. 150 V DC, nominal voltage 48 – 72 V DC

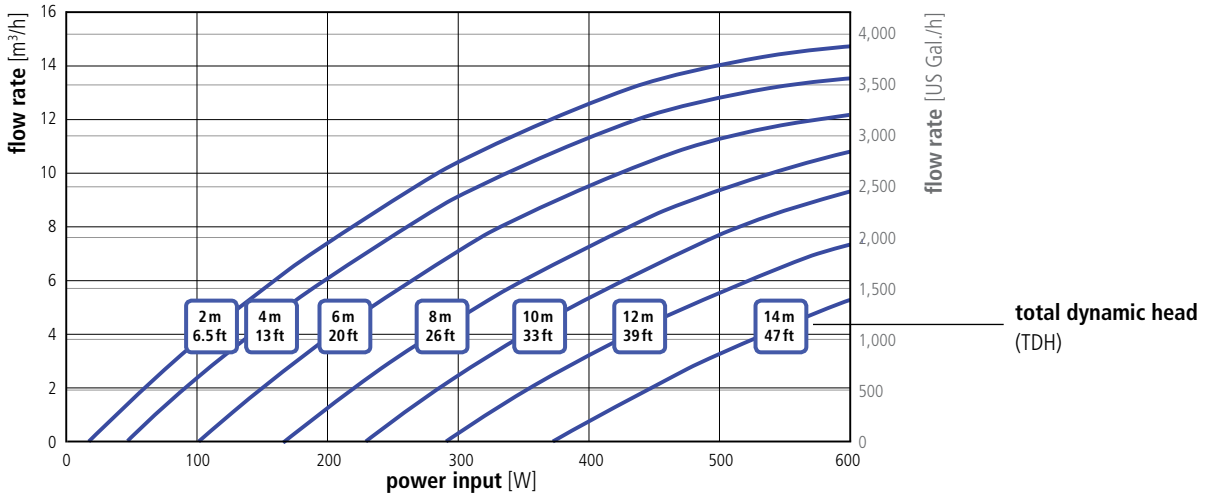
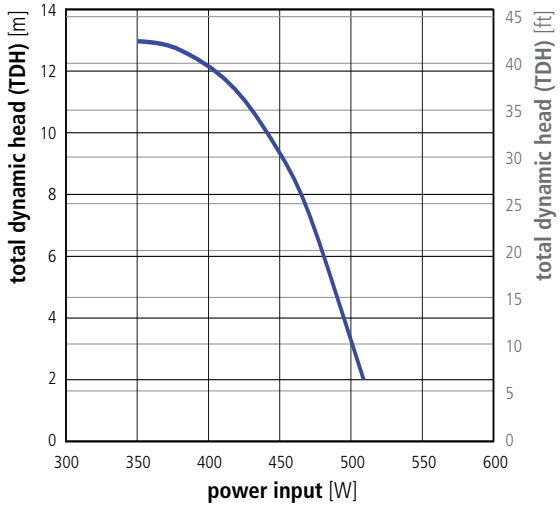
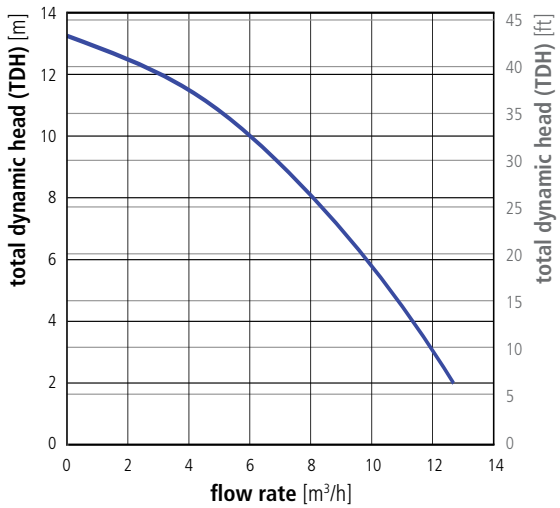


Chart: Battery Operation

battery, DC power supply: nominal voltage 48 V DC





total dynamic head (TDH)		flow rate			power input	current input
[m]	[ft]	[m³/h]	[US Gal./h]	[Imp. Gal./h]	[W]	[A]
2	6.6	12.8	3,382	2,816	507	10.6
3	9.8	12.3	3,250	2,706	502	10.5
4	13.1	11.4	3,022	2,516	496	10.3
5	16.4	10.6	2,801	2,332	489	10.2
6	19.7	9.9	2,616	2,178	480	10.0
7	23.0	9.2	2,431	2,024	471	9.8
8	26.2	8.2	2,166	1,804	464	9.7
9	29.5	7.2	1,902	1,584	454	9.5
10	32.8	6.0	1,585	1,320	443	9.2
11	36.1	4.8	1,268	1,056	426	8.9
12	39.4	3.0	793	660	406	8.5
13	42.7	0.0	0	0	350	7.3

*) PV modules at standard test condition: AM = 1.5, E = 1,000 W/m², cell temperature: 25 °C

Technical Data PS600 CS-15-1

article # 2921

		solar operation	battery operation
System			
max. flow rate	[m³/h | US gal./h]	15 | 4,000	13 | 3,400
max. total dynamic head (TDH)	[m | ft]	14 | 46	13 | 43
ambient temperature			
storage	[°C]	−30 to +55	
operation	[°C]	0 to +55	
Components			
Controller PS600			
input voltage			
max. power input (Vmp)*	[V DC]	> 68	
open circuit voltage (Voc)	[V DC]	max. 150	
nominal voltage	[V DC]	48 – 72	48
type of enclosure		IP 54	
dimensions: net, packing (total)	[cm]	39.5 × 17.5 × 16.5, 45 × 25 × 24 (0.027 m³)	
weight: net, gross	[kg]	4.5, 5.3	
motor ECDRIVE 600 CS			
type of enclosure		IP X4	
class of insulation		F	
pump end PE CS-15-1			
max. suction/positive inlet head	[m | ft]	3 | 10	
max. casing pressure	[bar]	2.5	
max. water temperature	[°C]	+60	
pump unit PU CS-15-1 (motor + pump end)			
dimensions: net, packing (total)	[cm]	see drawing below, 52 × 22 × 35 (0.04 m³)	
weight: net, gross	[kg]	8.7, 9.7	

*) PV modules at standard test condition: AM = 1.5, E = 1,000 W/m², cell temperature: 25 °C

Dimensions for PU CS-15-1 (motor + pump end) | mm [in]