

PS600

"The World's Most Economical Solar Pump"

LORENTZ



RELIABLE AND MAINTENANCE-FREE

PS600 eliminates the weakest links in solar pumping by using helical rotor (progressing cavity) and centrifugal pump ends and a brushless and water-filled motor.

No failure-prone diaphragms, no flooded-motor failures and no electronics in the well !

- Lift from as deep as 230 m (750 ft)
- Maximum 100 m³ per day (22.000 Imp-Gal.)
- PS600 eliminates the costs of fuel, delivery, engine maintenance, and pollution.
- In many cases it is **LESS COSTLY** than a conventional pump and generator installation
- Great reliability and life expectancy
- High resistance to sand and corrosion
- Fits 4" and larger well casings
- Wide voltage range for 48 to 72V systems (4-6 solar modules in series) Only one controller for solar direct or battery systems

>> DEEP WELL APPLICATIONS

The pump can be submersed as deep as necessary. Submersion depth does not affect the performance or place additional stress on the pump or motor.

>> SURFACE WATER APPLICATIONS

The pump can be installed in a stream, pond, tank or shallow well, in any position.

>> DRY RUN PROTECTION

A low water probe turns pump off to prevent dry-run damage. Reset is automatic after 20 minutes. The PS600 Controller has an RPM limit adjustment to reduce the maximum flow rate to about 50 %, to help match a limited water source.

>> SAND AND SILT TOLERANCE

The pump has high resistance to wear from sand, clay, etc. that may occur in a properly constructed water well. However, a concentration of solids greater than 2 % (by volume) may cause blockage in the pump or the drop pipe, especially at low flow rates. Do not use the pump to clean out a dirty well.

>> CONTROLLER

MPPT, well probe and float-/remote switch terminals
Lights indicate: system on, pump on, pump speed, tank full, water source low, overload, and battery low. Protected against reverse polarity, overload and high temperature.

>> BATTERY SYSTEMS

LOW-VOLTAGE DISCONNECT prevents battery damage from over-discharge. This feature is included in the controller.
Disconnect - Reconnect 44V-52V

>> STORAGE REQUIREMENT

A storage tank (not included) should be sized to supply a minimum of 5-10 days' water supply, depending on climate and application. Water storage is generally more economical than energy storage in batteries.

>> DROP PIPE

G1 ¼ (optionally 1" NPT) pump outlet. If water is dirty, consider a smaller size drop pipe to increase the flow velocity. This helps exhaust solid particles and prevent accumulation in the pipe. When considering reduced pipe size, consult a pipe sizing (friction loss) chart. Pipe can be of any standard material, rigid or flexible. A torque arrestor is NOT required.

>> PUMP CABLE and SPLICE

Standard submersible cable, 3-wire + ground (total 4 wires). Connection to the pump is made using industry-standard splicing methods.

>> DIMENSIONS & WEIGHTS

PUMP & MOTOR

- Diameter: 96 mm (3.78")
- Height: 500-800 mm (20" - 32") depending on model
- Weight: 11.5 kg (25 lbs) or less, depending on model

CONTROLLER

- Controller: 425 x 175 x 150 mm (17" x 7" x 6")
- 3 conduit holes: ½", ¾", and 1¼" nominal pipe
- Weight: 4.8 kg (11 lbs)
- Enclosure: gasket-sealed, weatherproof

>> WETTED MATERIALS

316 stainless steel, chromium, NBR rubber, natural rubber, POM, polyurethane (cable)

>> TEMPERATURE LIMITS

- Pump: water temp. up to 40° C (up to 104° F)
Specify temperature range on order
- Controller: Ambient -30° C to 55° C (-22° F to 131°)



>> NEED MORE WATER ?

Consider the PS1200 system. This systems use more power, to pump as high as 230m (750 ft) and as much as 135m³ per day.

>> DOUBLE SYSTEM

Two pump systems can be installed in the same water source if the well casing is not less than 6" inside diameter. This doubles the daily water volume.

>> INSTALLATION

Install the pump by the same methods and materials used for conventional submersible pumps. The PS600 instruction manual is clearly illustrated. No special product training is required.

>> WARRANTY

TWO YEAR manufacturer's warranty against defects in materials and workmanship.

PS600 Daily Flow Chart



for solar direct operated pumps

Calculated on
6 kWh/m²/day

C-xx = Centrifugal pump end
HR-xx = Helical Rotor pump end

System Voltage: 48 – 72V nominal, e.g. 4 to 6 standard 12V modules wired in series

How to select the right pump system:

Find the LIFT you require, and read the column below.

Find the DAILY VOLUME you require. For more water look further down the column, ...or to the right side for tracked systems.

Use the PEAK FLOW RATE for pipe sizing.

PEAK FLOW RATE for pipe sizing

Type	m ³ /h	Imp G/h	Type	m ³ /h	Imp G/h
HR-03H	0,5	110	HR-14	2,7	594
HR-04H	0,8	176	HR-20	3,6	792
HR-07	1,2	264	C-BF-04	7,3	1606
HR-10	1,9	418			



“The World’s Most Economical Solar Pump”

Watt	Pump Type	Fixed Array		Tracked	
		m ³ /day	USG/day	m ³ /day	ImpG/day
5m / 16ft					
240	C-BF-04	28	6.160	40	8.800
300	C-BF-04	35	7.700	50	11.000
350	C-BF-04	42	9.240	61	13.420
480	C-BF-04	50	11.000	74	16.280
600	C-BF-04	64	14.080	91	20.020
720	C-BF-04	70	15.400	100	22.000

Watt	Pump Type	Fixed Array		Tracked	
		m ³ /day	USG/day	m ³ /day	ImpG/day
15m / 49ft					
240	HR-14	16	3.520	23	5.060
300	HR-14	19	4.180	26	5.720
350	HR-14	22,5	4.950	29	6.380
480	HR-20	27	5.940	35	7.700
600	HR-20	30	6.600	39	8.580
720	C-BF-04	36	7.920	51	11.220

Watt	Pump Type	Fixed Array		Tracked	
		m ³ /day	USG/day	m ³ /day	ImpG/day
30m / 100ft					
240	HR-04	6,7	1.470	9,5	2.090
300	HR-04	7,5	1.650	9,5	2.090
350	HR-14	14	3.080	20	4.400
480	HR-14	18	3.960	26	5.720
600	HR-14	22	4.840	30	6.600
720	HR-20	25	5.500	36	7.920

Watt	Pump Type	Fixed Array		Tracked	
		m ³ /day	USG/day	m ³ /day	ImpG/day
50m / 166ft					
240	HR-04	5	1.100	7,4	1.630
300	HR-04	5,5	1.210	7,9	1.740
350	HR-04	6	1.320	8,7	1.910
480	HR-14	11	2.420	15,5	3.410
600	HR-14	14	3.080	20	4.400
720	HR-14	17,8	3.920	25,8	5.680

Watt	Pump Type	Fixed Array		Tracked	
		m ³ /day	USG/day	m ³ /day	ImpG/day
70m / 233ft					
350	HR-04	4,7	1.030	6,8	1.500
480	HR-04	6	1.320	8,7	1.910
600	HR-07	9,4	2.070	13,6	2.990
720	HR-07	10,2	2.240	14,8	3.260

Watt	Pump Type	Fixed Array		Tracked	
		m ³ /day	USG/day	m ³ /day	ImpG/day
90m / 300ft					
350	HR-03	3,5	770	5	1.100
480	HR-04H	4,8	1.060	6,5	1.430
600	HR-07	7,2	1.580	10,4	2.290
720	HR-07	8,7	1.910	12,6	2.770

Pump Type	Fixed Array		Tracked		4mm ² max. 20m #10 max 85ft
	m ³ /day	USG/day	m ³ /day	ImpG/day	
10m / 33ft					
HR-14	17	3.740	24	5.280	
HR-14	19	4.180	27	5.940	
HR-14	22	4.840	30	6.600	
HR-20	30	6.600	38	8.360	
C-BF-04	42	9.240	60	13.200	
C-BF-04	50	11.000	71	15.620	

Pump Type	Fixed Array		Tracked		4mm ² max. 25m #10 max 100ft
	m ³ /day	USG/day	m ³ /day	ImpG/day	
20m / 65ft					
HR-14	12,6	2.770	18,2	4.000	
HR-14	15	3.300	21,6	4.750	
HR-14	18	3.960	26	5.720	
HR-14	22	4.840	32	7.040	
HR-20	25	5.500	35	7.700	
HR-20	29	6.380	42	9.240	

Pump Type	Fixed Array		Tracked		HR04: 4mm ² max. 60m. HR07 & HR14: 10mm ² max. 60m
	m ³ /day	USG/day	m ³ /day	ImpG/day	
40m / 133ft					
HR-04	5,5	1.210	8	1.760	
HR-04	6,2	1.360	8,9	1.960	
HR-04	6,9	1.520	10	2.200	
HR-14	14	3.080	20	4.400	
HR-14	17	3.740	24,5	5.390	
HR-14	20	4.400	29	6.380	

Pump Type	Fixed Array		Tracked		HR04: 4mm ² max. 60m. HR07 & HR14: 10mm ² max. 60m
	m ³ /day	USG/day	m ³ /day	ImpG/day	
60m / 200ft					
HR-04	3,9	860	5,6	1.230	
HR-04	4,7	1.030	6,8	1.500	
HR-04	5,6	1.230	8,1	1.780	
HR-07	8,6	1.890	12,5	2.750	
HR-07	9,5	2.090	14	3.080	
HR-07	11	2.420	15,9	3.500	

Pump Type	Fixed Array		Tracked		HR04 & HR03: 6mm ² max. 90m others: 10mm ² max. 125m
	m ³ /day	USG/day	m ³ /day	ImpG/day	
80m / 266ft					
HR-03	3,8	840	5	1.100	
HR-04H	5,7	1.250	8,2	1.800	
HR-07	8,4	1.850	12	2.640	
HR-07	9,4	2.070	13,6	2.990	

Pump Type	Fixed Array		Tracked		HR04 & HR03: 6mm ² max. 90m others: 10mm ² max. 125m
	m ³ /day	USG/day	m ³ /day	ImpG/day	
110m / 360ft					
HR-03	3,1	680	4,5	990	
HR-04H	5	1.100	7	1.540	
HR-04H	5,7	1.250	8,2	1.800	
HR-04H	6	1.320	8,7	1.910	

48V Battery Performance

total lift [m] [ft]	Pump Model	LPM	Imp GPM	Watts	cable size mm ²
5 16	C-BF-04	110	24,2	480	6mm ² -35m
	HR20	49,0	10,8	140	2,5mm ² - 30m
	HR-14	38,0	8,4	120	
10 33	C-BF-04	100,0	22,0	470	6mm ² -35m
	HR20	45,0	9,9	200	2,5mm ² - 30m
	HR-14	36,0	7,9	160	
15 50	C-BF-04	80,0	17,6	450	6mm ² -35m
	HR20	44,0	9,7	230	2,5mm ² - 30m
	HR-14	33,6	7,4	160	
20 65	HR-14	33,0	7,3	220	4mm ² - 30m
30 100	HR-14	31,0	6,8	275	6mm ² - 50
40 130	HR-14	29,0	6,4	335	
50 165	HR-14	27,0	5,9	375	10mm ² -65m
60 200	HR-07	13,5	3,0	240	6mm ² -70m
80 266	HR-07	12,8	2,8	300	10mm ² -110m
100 330	HR-04H	8,4	1,8	250	10mm ² -140m
120 400	HR-04H	8,2	1,8	275	
140 466	HR-04H	8,0	1,8	310	

Calculations are based on Uni-Solar panels. Flow rates may vary plus / minus 10 %. All systems are selected for optimum performance. Each system can handle an additional 15 % in case of unexpected draw-down in bore. Use ETATRACK solar trackers to reduce your system cost or increase daily flow.

For battery-powered pumping systems:

48V systems use PS600 and 24 to 48V use the PS200 system

For other lifts and voltages consider PS1200 or PS200 system

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Specifications are subject to change. Please use newest versions