Solar pumping System

Nominal Flow	2.5 m3/hr @ 100 m
Flow Range	0.9 ~ 5.2 m3/hr
Head Range	20 ~ 120 m

Note:

MAXIMA solar motor powers the new system for the supply of clean water based on the most widely available renewable energy, the sun. It is designed for easy use and requires no maintenance. It is the ideal solution for supplying water in remote areas, where the normal power supply of electricity from the power grid is inconsistent or completely unavailable

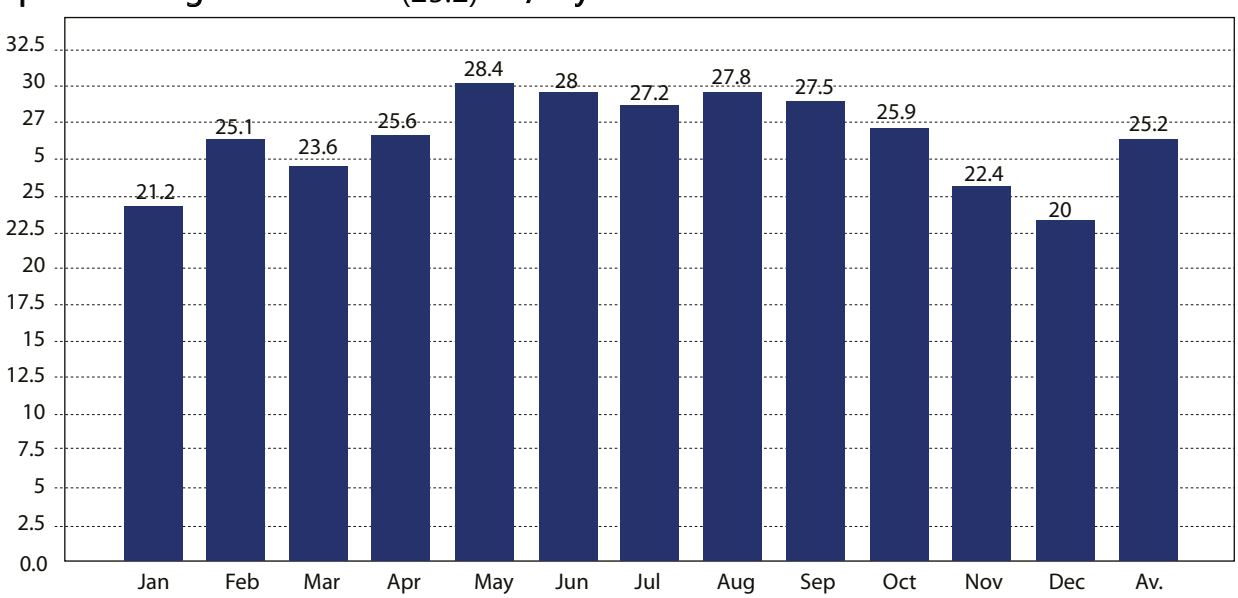
Parameter

Location:	UAE	Water Temp:	25°C		
Required daily output:	10m^3/day	Dirt loss:	3%	Motor lenght:	50
Pipe type:	Plastic	Static Head:	55m	Pipe length:	20m

Products

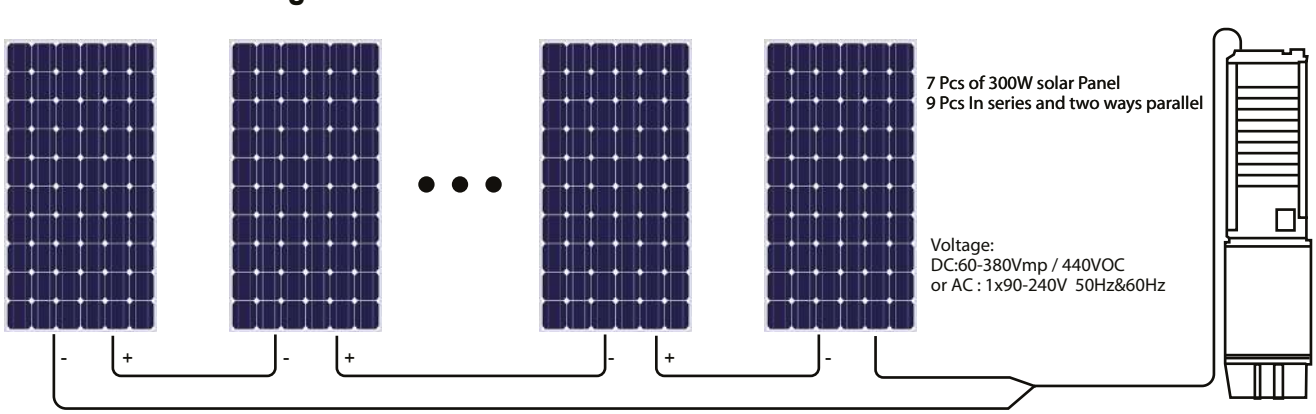
Submersible pump	1pc;4SPN2-13 (2HP DC)
Solar panel	7pc;2100Wp;300w ×7pcs
Motor cable	
Pipeline	20m;Pipeline
Accessories	

Daily output in average month (25.2) m^3/day

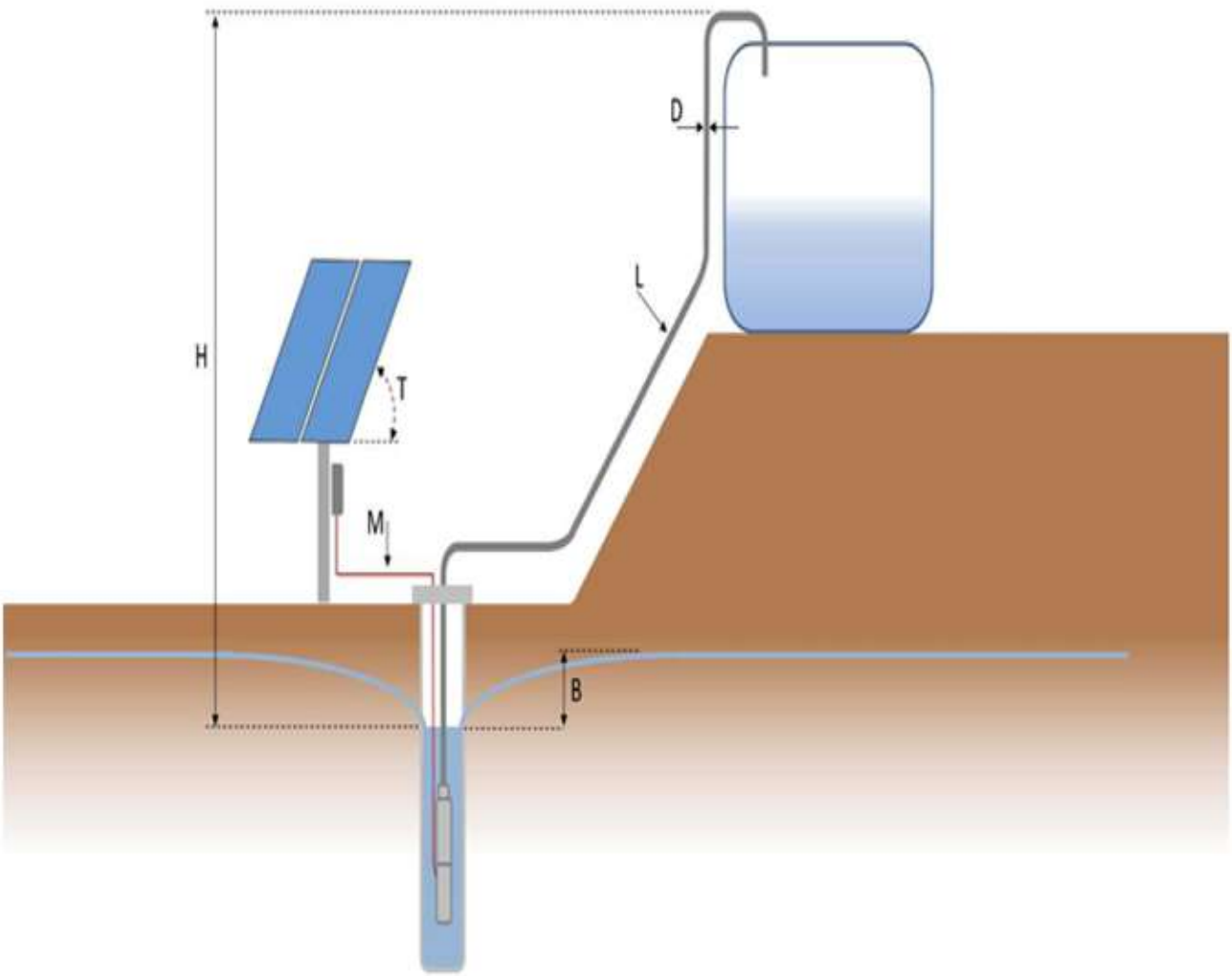


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av.
Energy[Kwh]	10.36	12.27	11.53	12.51	13.87	13.70	13.29	13.61	13.44	12.64	10.94	9.79	12.32
Irradiation(kWh/m2)	5.48	6.49	6.10	6.62	7.34	7.25	7.03	7.20	7.11	6.69	5.79	5.18	6.52

Solar Panel Wiring

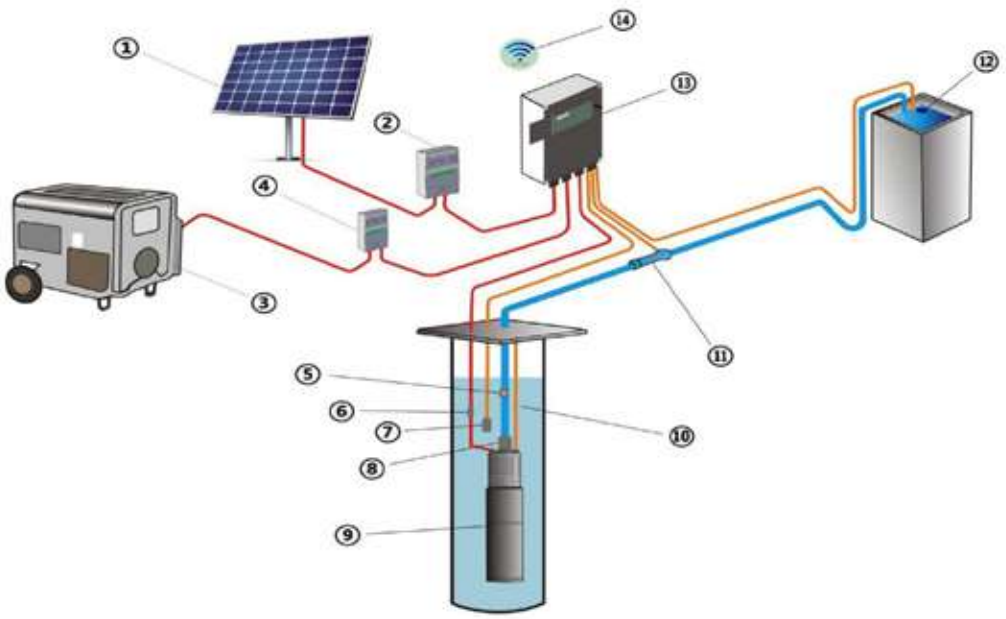


Sizing Layout



H (Static head):	Vertical height from the dynamic water level to the highest point of delivery..
B (Drawdown):	Lowering of water level depending on flow rate and recovery rate of the well.
D (Pipeline inner diameter).	
L (Pipe length):	Entire pipeline from the pump outlet to the point of delivery. Ellbows and armatures must be added as an equivalent length of pipeline.
M (Motor cable):	The cable between controller and pump unit.
T (Tilt angle):	Angle of the PV generator surface from the horizontal plane.

System Layout



1. Solar panels
2. SPD(DC) Surge Protection Device(optional)
3. Generator or Grid (optional)
4. SPD(AC) Surge Protection Device (optional)
5. Check valve (optional)
6. Wiring Package(Epoxy Resin Wiring Package or Heat Shrinkable Tube Wiring Package)
7. Float Switch (For Dry Protection, Optional)
8. Sacrificial Anode(optional)
9. Solar water pump
10. Traction rope
11. Flow meter(optional)
12. Float Switch (For Tank)
13. Monitor(optional)
14. GPRS (optional)

NOTE

1. Please read the manual carefully for all installation accessories,
Please contact factory if you need all the above accessories.
2. Float Switch for Dry Protection is Optional, Because the pump system has its own dry protection;
3. Monitor is not a necessary part of pump system .but it provides more functions and protections for pump system. Making the system more convenient and intelligent. For example intelligent switching of AC/DC power supply; Floating ball interface terminal etc.
4. The pump shall be installed at least 1.5m away from the bottom of the well:
5. It is recommended to install a check valve every 70m of the vertical height of the pipeline.

4SPN2-13 (2HP DC)

Solar Submersible Pump System

System Overview

Head	max. 130m
Flow	max 92L/min
Recommend Max Input Power	max. 2.2 kW
Minimum well diameter	min 4 inch
Pump discharge	Rp 1.25”
Efficiency Max	%

Product advantage

Stainless steek: AISI 304
BLDC High Efficiency Motor,
External Controller:
Only could powered by DC power:
Voltage/Current/Power/Rpm/Controller temperature Display
Encapsulated water filled motor (No pollution risk):
Soft start running makes system’s life longer:
Thrust bearing system
Reverse protection (reverse + and - is fine):
Over load protection/over current protection/over power protection:
Wide voltage: 90-380V mp/440VOC:
Dry protection(No additional float sensor required):
Dry protection(No additional floar sensor required):
GPRS(Optional):

Technical Data:

Controller 4SPN2-13 (2HP DC)

Built in controller;
MPPT Efficiency Max. 98%
Voltage 90-380Vmp/440VOC
Enclosure class: IP65
Error Report
Losting-Phase protection
Over temperature protection;

Motor 4SPN-13 (2HP DC)

Voltage	DC max. VOC 450V DC Vmp 60-380V
Current	max. DC 10A
Motor Efficiency	max 85%
WaterTemp	max40°C
Insulation class	F
Enclosure class	IP X8
Submersion	max. 150m
Required cooling flow	0.8L/s
Speed	1000-4000

Pump End

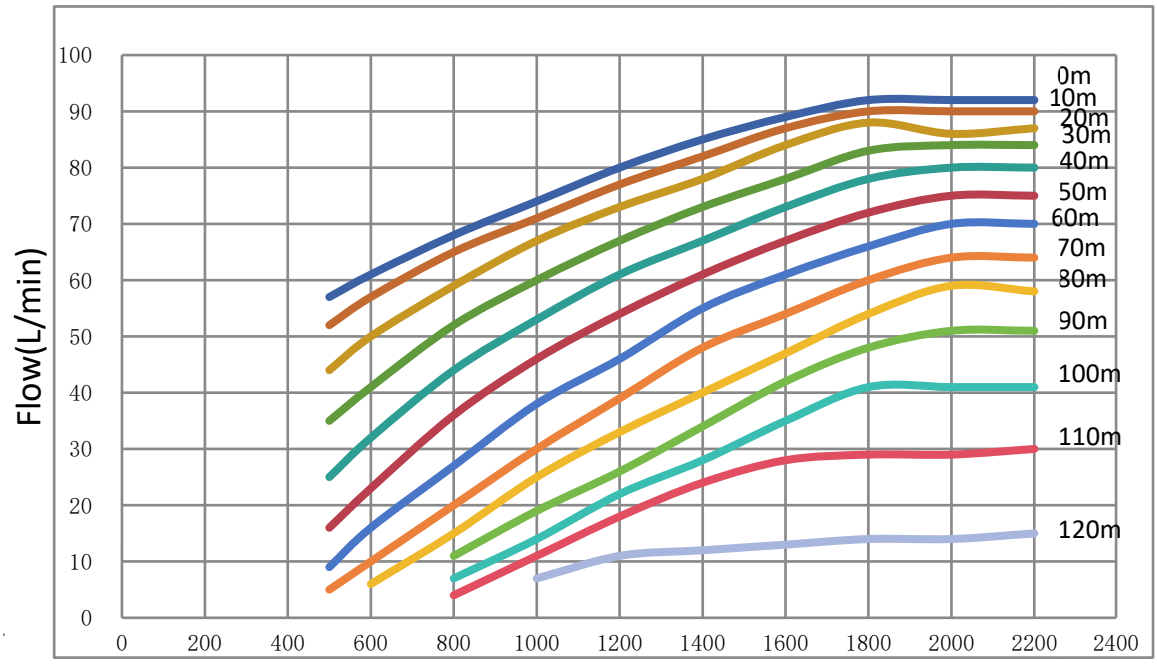
Stainless steel: AISI 304 ;
Non-return valve:
Centrifugal pump

Standards

Note:

**Accpet 2-10 PCS 340W Panel best 5-7Pcs
*The Controller is IP 65 Rated however it is recommended that it is not mounted in direct sunlight;
*VOC (V) Volts open circuit nothing connected;Vmp (V) Volts maximum power point under load;Exceeding limits may cause serious harm or irreparable damage.

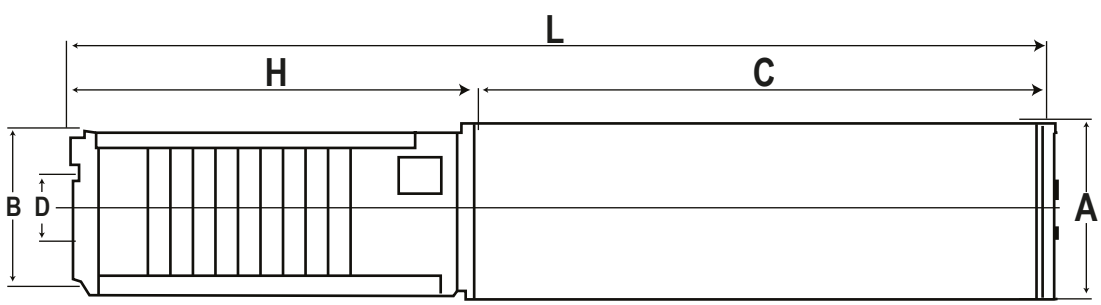
4SPN2-13 (2HP DC)
Solar Pumping Project
Pump chart



INPUT POWER (WATTS)

	INPUT POWER (WATTS)									
	500	600	80	1000	1200	1400	1600	1800	2000	2200
Head (m)	FLOW RATE (LITERS / MINUTES)									
0	57	61	68	74	80	85	89	92	92	92
10	52	57	65	71	77	82	87	90	90	90
20	44	50	59	67	73	78	84	88	86	87
30	35	41	52	60	67	79	78	83	84	84
40	25	32	44	53	61	67	73	78	80	80
50	16	23	36	46	54	61	67	72	75	75
60	9	16	27	38	46	55	61	66	70	70
70	5	10	20	30	39	48	54	60	64	64
80		6	15	25	33	40	47	54	59	58
90			11	19	26	34	52	48	51	51
100			7	14	22	28	35	41	41	41
110			4	11	18	24	28	29	29	30
120				7	11	12	13	14	14	15

Dimensions and Weights



	A	B	C	H	L	D
Dimension (mm)	o99	90	620	426	1046	$1\frac{1}{4}$

	Pump Unit	Motor	Pump End	Package Unit
Weight (kg)	17	12.5	4.5	20.5

Package Volume
1.12m*0.16*0.2m

The size and weight information may be changed, please confrim with the factory.