

Alagaya Camp Solar Sizing**Solar pumping project**

Note: There is an existing pump; it only require installation of solat PV and accessories

Parameter

Location:	Sudan, Kosti (13° North; 32° East)	Water temperature:	25 °C	Altitude	855 m
Required daily output:	255 m ³ ; Sizing for July	Dirt loss:	5.0 %	Motor cable:	35 m
Pipe type (Discharge side):	plastic, drawn/pressed, used: 0.030 mm	Pressure head:	20 m	Pipe length (Discharge side):	35 m
Pipe type (Suction side):	plastic, drawn/pressed, used: 0.030 mm	Suction head:	3 m	Pipe length (Suction side):	5.0 m

Products**Quantity Details**

PSk2-9 CS-F42-20	1 pc.	Surface pump system including controller with DataModule, motor and pump end
LC275-P60	22 pc.	6,050 Wp; 22 x 1 modules; 15 ° tilted
Motor cable	35 m	2.5 mm ² 3-phase cable for power and 1-phase cable for ground
Pipeline (Discharge side)	35 m	100 mm (inner diameter) Pipeline
Pipeline (Suction side)	5.0 m	80 mm (inner diameter) Pipeline
Accessories	1 set	Water Sensor, Float Switch, PV Disconnect 1000-40-5, PV Protect 1000-125, SmartPSUk2, SmartStart, Surge Protector2

SunSwitch setting in PumpScannermin. 300 W/m²**Daily output in July**208 m³**Daily values**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av.
Output [m ³]	259	273	275	267	239	226	208	214	240	252	251	251	246
Energy [kWh]	33	34	35	34	31	30	28	28	31	32	32	32	32
Irradiation [kWh/m ²]	6.3	6.7	7.0	6.9	6.1	5.9	5.4	5.5	6.0	6.3	6.3	6.1	6.2
Rainfall [mm]	0	0	0	0.033	0.27	0.97	2.9	4.0	1.5	0.27	0	0	0.83
Ambient temp. [°C]	26	28	31	32	29	28	27	27	28	30	30	27	29

Hourly values

	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
Output [m ³ /h]	0	0	9.8	22	28	31	32	30	27	21	8.6	0	0
Energy [kWh]	0.16	0.99	1.8	2.6	3.2	3.5	3.6	3.5	3.1	2.5	1.7	0.96	0.16