

February 21, 2013

New project

Solar pumping project

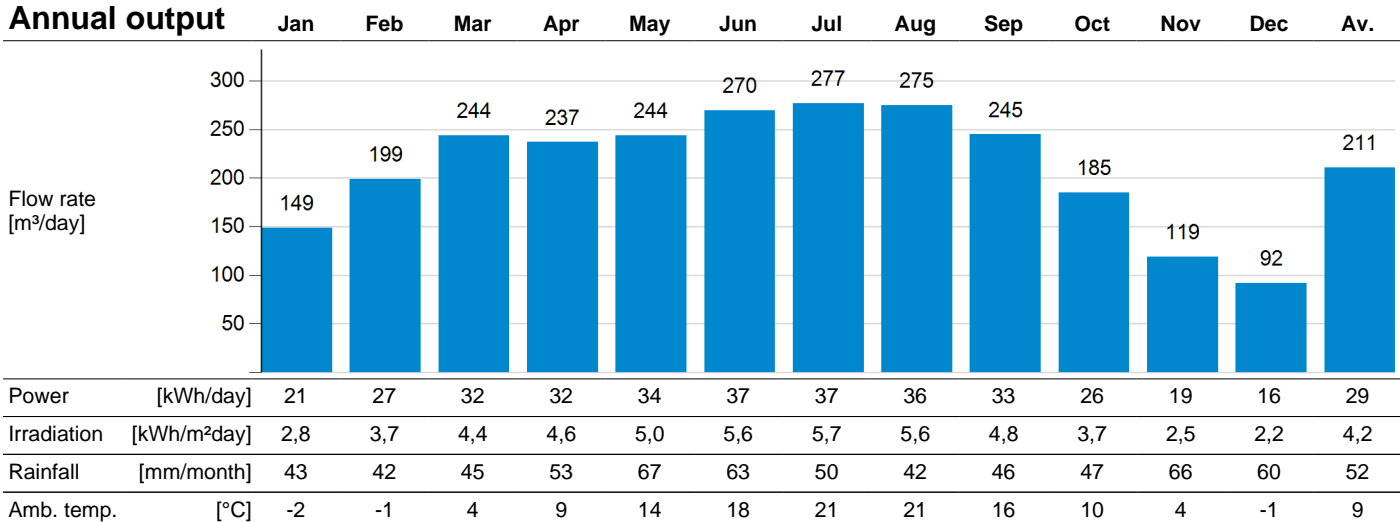
Project data

Solar data:	Skopje, Macedonia (42°N; 21°E; 3,7 kWh/m ² hor.)	Static head:	20 m	Cable length:	25 m
Required daily flow:	200 m ³ /day in annual average	Dirt loss:	5,0 %	Pipe length:	-

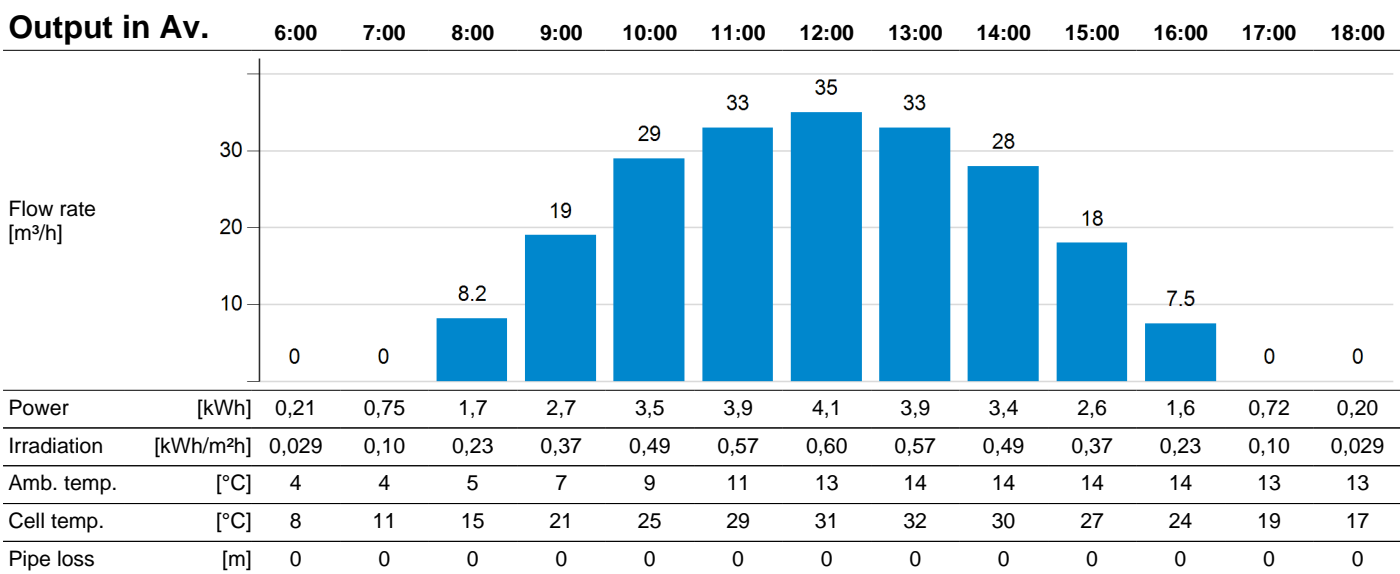
Products

Quantity	Details	Item #
PS9k C-SJ42-4	1 pc. Pump system incl. Controller, Motor, Pump end	1189
LC120-12P	62 pc. 7.440 Wp; 31 x 2 modules; 42 ° tilted fixed array	960
Motor cable	25 m 4mm ² 3-phase cable	-
Well probe sensor	1 pc. Dry running protection	1658
Cable splice kit	1 pc. Submersible Cable splice kit (2.5 ... 6 mm ²)	1660

Annual output



Output in Av.

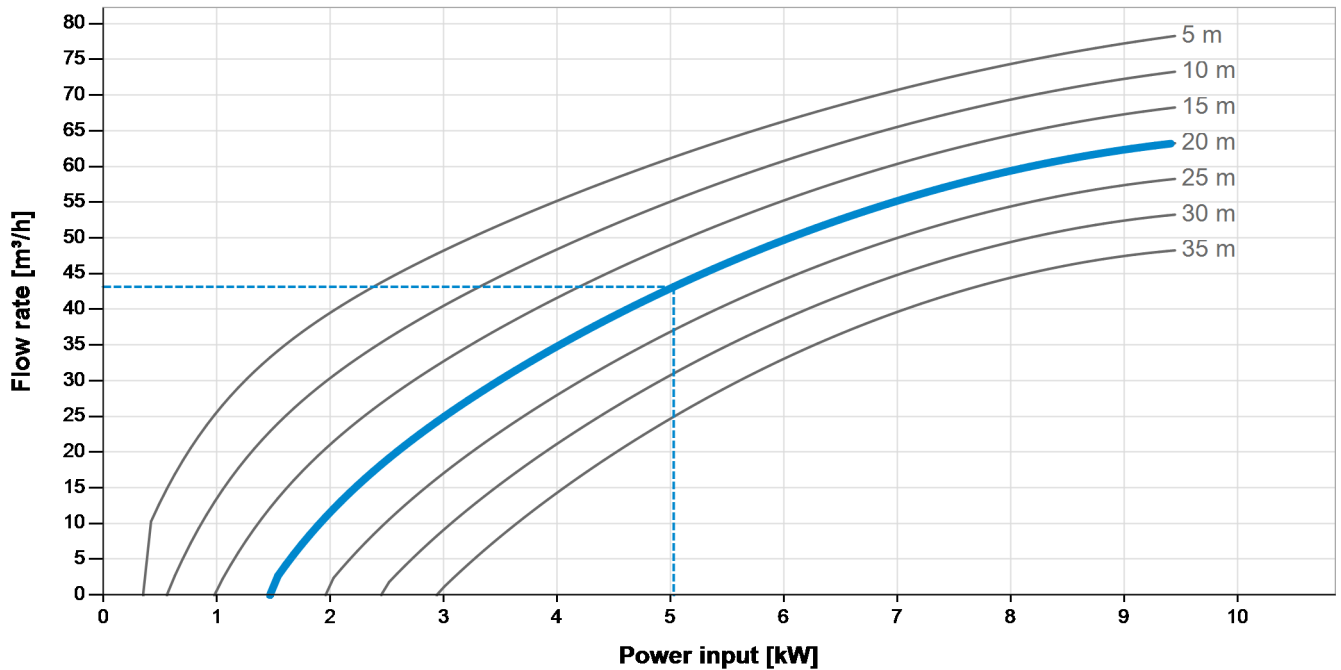


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System performance



			Min.	at 800 W/m², 20 °C	Max./STC*
PV generator	Cell temperature	[°C]		46	25
	Power loss (temp)	[%]		11	-
	Dirt loss	[%]		5,0	-
	Pmax	[Wp]		5.060	7.440
	Vmp	[V]		475	530
	Imp	[A]		11	14
	Voc	[V]		614	676
	Isc	[A]		12	15
	Pout	[W]		5.060	-
	Vout	[V]		693	-
	Iout	[A]		7,4	-
Motor cable	Power loss (temp)	[%]	0,12	0,41	0,76
Pump system	Motor power	[W]	1.470	5.030	9.410
	Motor voltage	[V AC]	397	399	400
	Motor current	[A]	2,1	7,3	14
	Motor speed	[rpm]	1.705	2.505	3.225
	Frequency	[Hz]	30	44	57
	Flow rate	[m³/h]	0	43	63
	Efficiency	[%]	0	47	47

*STC: Standard Test Conditions for Photovoltaic Modules, 1000 W/m² inplane irradiation, 25° C cell temperature