

Saturday, 25 August 2012

## HABITAT ENERGY SRL

Solar pumping project

**Note:** Sisteme integrate, sustenabilitate si inovatie!

### Parameter

|                        |  |              |      |
|------------------------|--|--------------|------|
| Location:              | Romania, Bucharest (44° North; 26° East) | Static head: | 35 m |
| Required daily output: | 10 m <sup>3</sup> ; Sizing for July      | Motor cable: | 40 m |
| Dirt loss:             | 5,0 %                                    | Pipeline:    | -    |

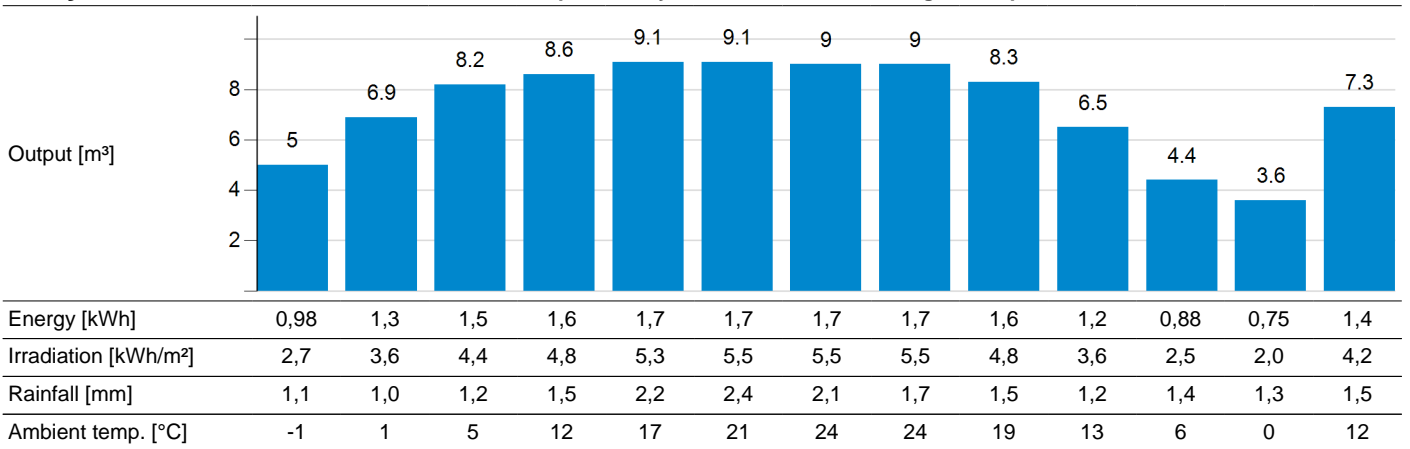
### Products

| Quantity    | Details  |
|-------------|--|
| PS200 HR-07 | 1 pc. Submersible pump system including controller, motor and pump end |
| LC120-12P   | 3 pc. 360 Wp; 3 x 1 modules; 44 ° tilted                               |
| Motor cable | 40 m 10 mm <sup>2</sup> 3-phase cable                                  |

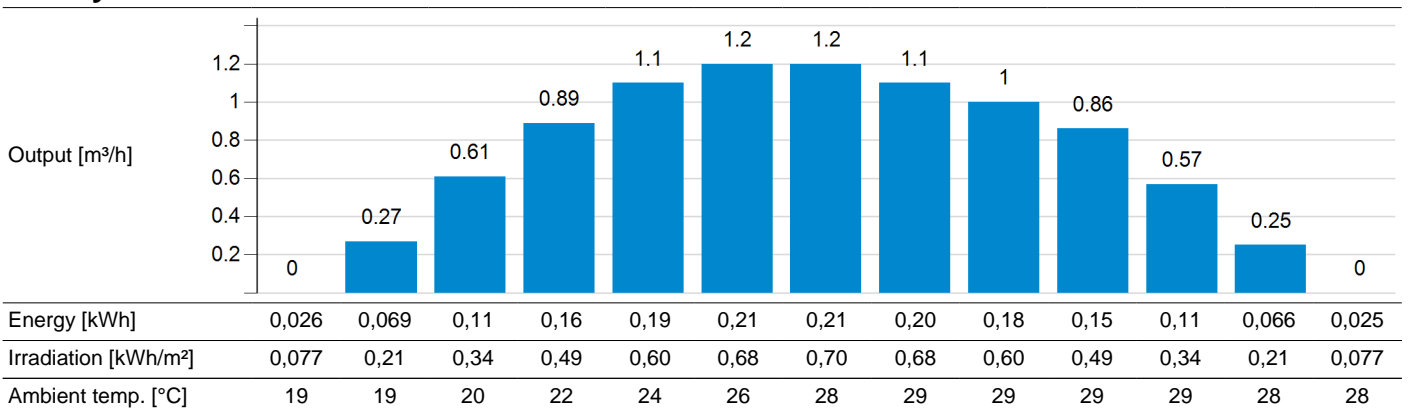
### Daily output in July

**9,0 m<sup>3</sup>**

#### Daily values



#### Hourly values

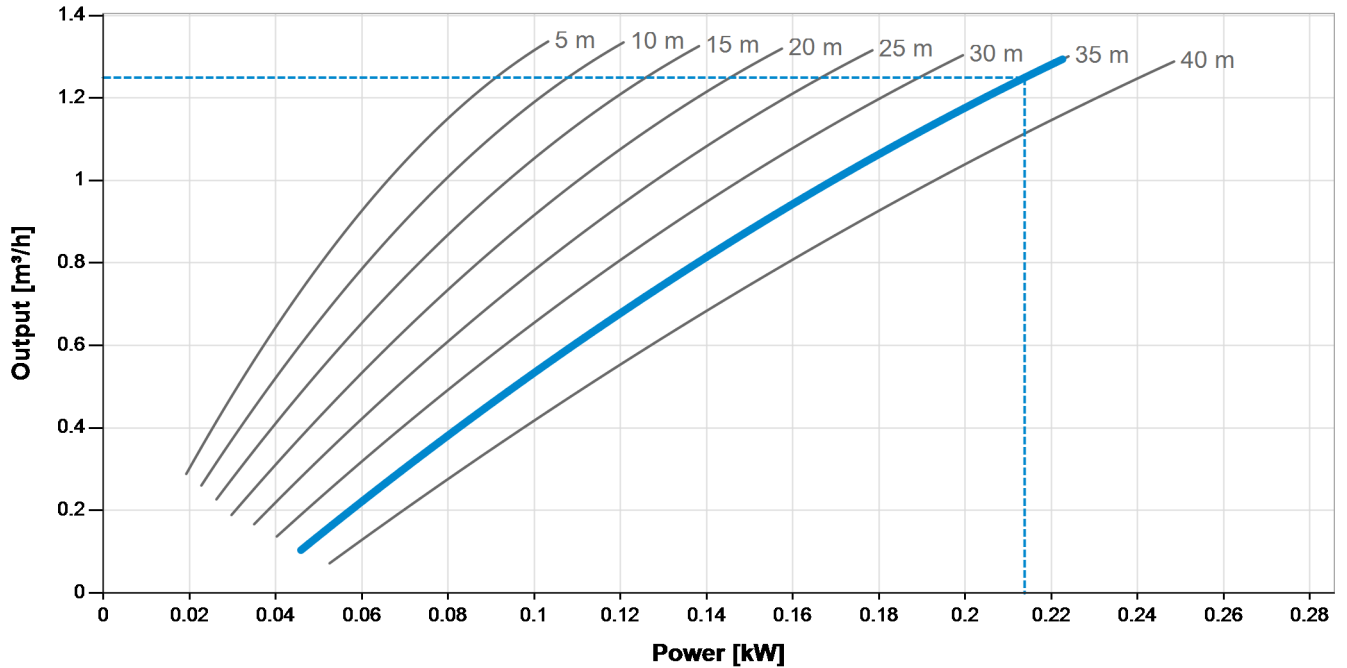


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### System characteristic



|                     |                    |            | Min. | 800 W/m², 20 °C | Max./STC* |
|---------------------|--------------------|------------|------|-----------------|-----------|
| <b>PV generator</b> | Cell temperature   | [°C]       |      | 46              | 25        |
|                     | Temperature loss   | [%]        |      | 11              | -         |
|                     | Dirt loss          | [%]        |      | 5,0             | -         |
|                     | Pmax               | [Wp]       |      | 245             | 360       |
|                     | Vmp                | [V]        |      | 46              | 51        |
|                     | Imp                | [A]        |      | 5,3             | 7         |
|                     | Voc                | [V]        |      | 59              | 65        |
|                     | Isc                | [A]        |      | 6,0             | 8         |
|                     | Pout               | [W]        |      | 218             | -         |
|                     | Vout               | [V]        |      | 52              | -         |
|                     | Iout               | [A]        |      | 4,2             | -         |
|                     | <b>Motor cable</b> | Power loss | [%]  | 1,2             | 1,2       |
| <b>Pump system</b>  | Motor power        | [W]        | 46   | 214             | 223       |
|                     | Motor voltage      | [V EC]     | 14   | 51              | 52        |
|                     | Motor current      | [A]        | 3,2  | 4,2             | 4,3       |
|                     | Motor speed        | [rpm]      | 767  | 3.190           | 3.285     |
|                     | Flow rate          | [m³/h]     | 0,10 | 1,3             | 1,3       |
|                     | Efficiency         | [%]        | 21   | 55              | 56        |

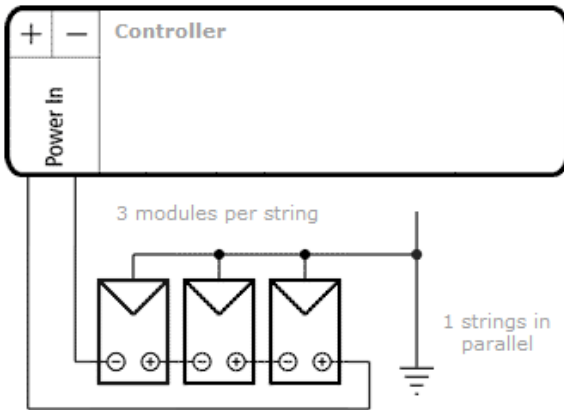
\*STC: Standard test conditions for photovoltaic modules, 1000 W/m² solar irradiance, 25 °C cell temperature

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### Wiring diagram



Grounding should be done according to the instructions of the module manufacturer.