


**Project:** Grundfos Solar Combo 2 (80m 10 000L per day)  
**Reference Number:**

**Client:**  
**Client Number:**  
**Contact:**

Position	Qty.	Description
	1	<p><b>SQF 1.2-3</b></p>  <p style="text-align: right;"><b>Note! Product picture may differ from actual product</b></p> <p>Product No.: <a href="#">96834838</a>            The 3" SQFlex pump with helical rotor is for high heads and low flow rates.</p> <p>The SQFlex system is a reliable water supply system based on renewable energy sources, such as solar and wind energy.            Thanks to its flexible energy supply and performance, the SQFlex system can be combined and adapted to meet any need on the installation site.</p> <p>The SQFlex system has a wide voltage range, built-in maximum power point tracking (MPPT) as well as dry-running, voltage and overload protection.</p> <p><b>Liquid:</b>            Pumped liquid: Water            Maximum liquid temperature: 40 °C            Liquid temperature during operation: 20 °C            Density: 998.2 kg/m<sup>3</sup>            Kinematic viscosity: 1 mm<sup>2</sup>/s</p> <p><b>Technical:</b>            Approvals on motor nameplate: CE,RCM,EAC</p> <p><b>Materials:</b>            Pump: Stainless steel                      DIN W.-Nr. 1.4301                      AISI 304            Impeller: Stainless steel                      DIN W.-Nr. 1.4301                      AISI 304</p> <p><b>Installation:</b>            Maximum ambient pressure: 15 bar            Pump outlet: Rp 1 1/4            Minimum borehole diameter: 76 mm</p> <p><b>Electrical data:</b>            Motor type: MSF3            Power input - P1: 1.4 kW            Rated voltage ac: 1 x 90-240 V            Rated voltage dc: 30-300 V            Rated current: 8.4 A            Power factor: 1.0</p>



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**Date:**

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		Rated speed: 500-3600 rpm Start. method: direct-on-line Enclosure class (IEC 34-5): IP68 Insulation class (IEC 85): F Length of cable: 2 m Udc: 300 V 30 V  <b>Others:</b> Minimum efficiency index, MEI : -.- Net weight: 9.81 kg Gross weight: 10.9 kg Shipping volume: 0.024 m <sup>3</sup>

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## 96834838 SQF 1.2-3

### Input - summary

Water volume (max): 10 m<sup>3</sup>/day  
 Peak month: January  
 Static lift above ground: 80 m  
 Dynamic water level: 0 m  
 Sun tracking: No (fixed)  
 Location: George, Western Cape, South Africa  
 Latitude: -33.963 DD, Longitude: 22.4617 DD

### Products

Pump: SQF 1.2-3, 1 x 96834838  
 Solar module: 3 x Desrv 265

### Sizing results - summary

#### Water production, Peak flow and Price

Total water production per year: 3570 m<sup>3</sup>  
 Avg. water production per day: 9.8 m<sup>3</sup>/day  
 Average water production per watt per day: 12.32 l/Wp/day

#### Solar module configuration:

Number of solar modules in series: 3, in parallel: 1  
 Solar array rated power: 0.795 kW  
 Solar array rated volts: 92.31 V  
 Sun tracking: No (fixed)  
 Tilt angle: 33 deg.

#### Typical performance at solar radiation 800 W/m<sup>2</sup>

Flow: 1.2 m<sup>3</sup>/h  
 Total head: 80.0 m

#### Cables and pipes:

Pump cable length: 10 m  
 Pump cable size: 1.5 mm<sup>2</sup>  
 Total cable loss: 2.0 %

Pipe diameter: 32 mm  
 Friction loss: 0.0 m

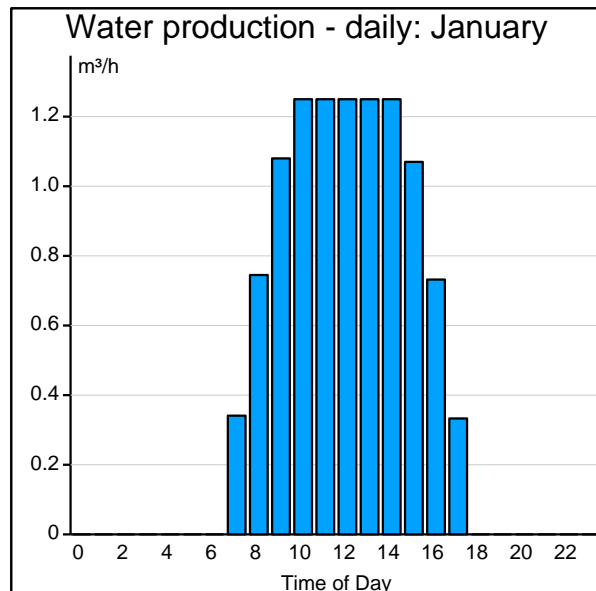
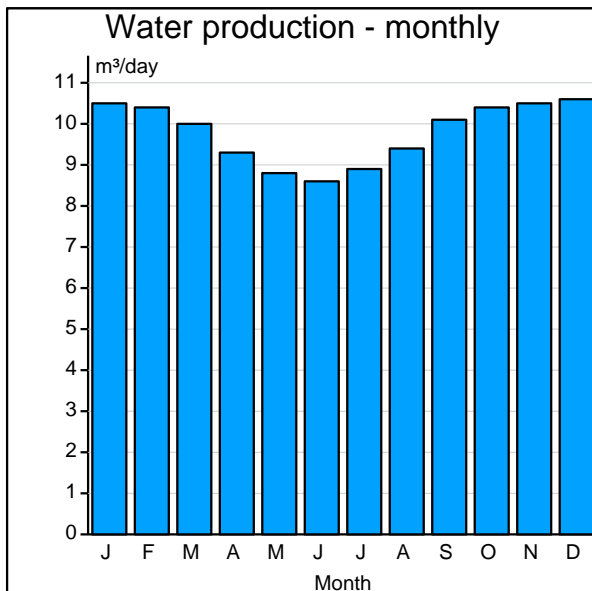
### System performance - monthly average

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Water production [m <sup>3</sup> /day]	10.5	10.4	10	9.3	8.8	8.6	8.9	9.4	10.1	10.4	10.5	10.6
Energy production [kWh/day]	5.3	5.2	5.0	4.6	4.3	4.1	4.3	4.8	5.1	5.2	5.3	5.4
Radiation horizontal [kWh/m <sup>2</sup> day]	8.7	7.8	6.5	4.9	3.9	3.4	3.7	4.7	6.2	7.4	8.4	9.0
Radiation tilt [kWh/m <sup>2</sup> day]	7.8	7.7	7.2	6.5	6.0	5.7	6.1	6.7	7.4	7.6	7.7	7.8
Avg. Temp. [°C]	22.1	22.2	20.1	17.0	13.2	10.1	10.0	11.4	14.3	16.6	18.7	21.0

Solar data location: Latitude: -33 DD, Longitude: 23 DD

#### AC power (backup) - water production

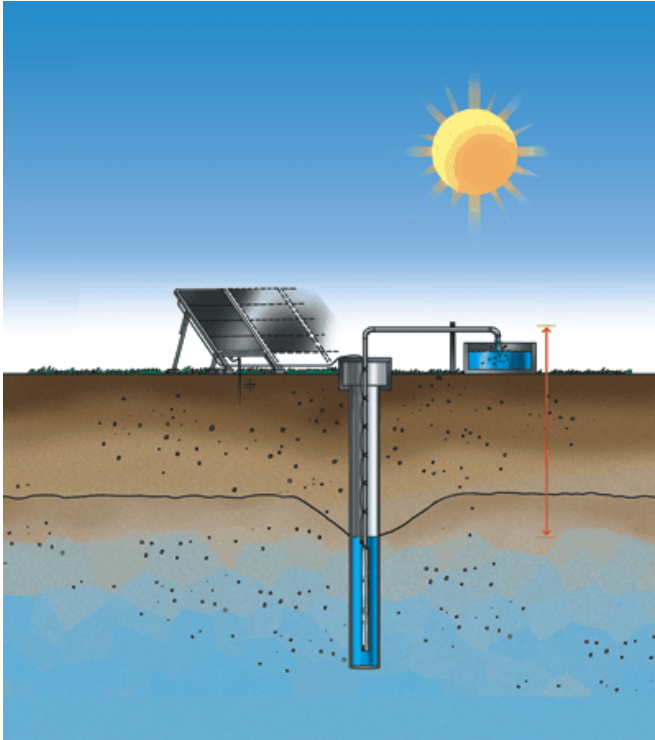
Recommended minimum output: 1.5 kW  
 AC 115 V: Produces: 1.32 m<sup>3</sup>/h  
 AC 230 V: Produces: 1.33 m<sup>3</sup>/h



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### Installation and Input



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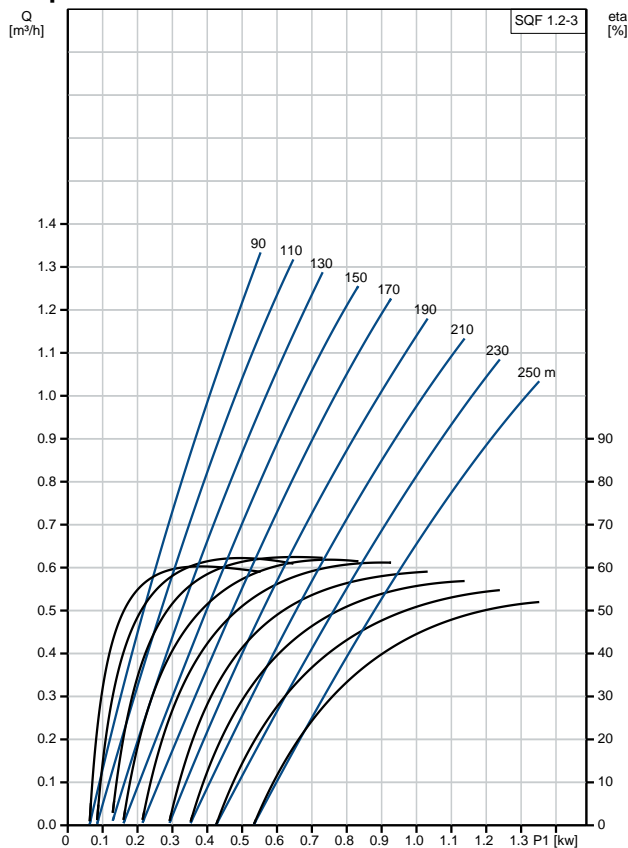
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### Pump Curve



### Dimensional Drawing

