



# *Solar Water Pump System*

*Sunshine-PV Company*



新能光電科技股份有限公司



# Outline

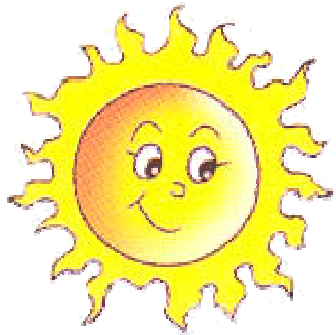
- **Solar water pump system components**
- **System 1**
- **System 2**
- **System 3**





# Conversion of Energy

Solar energy

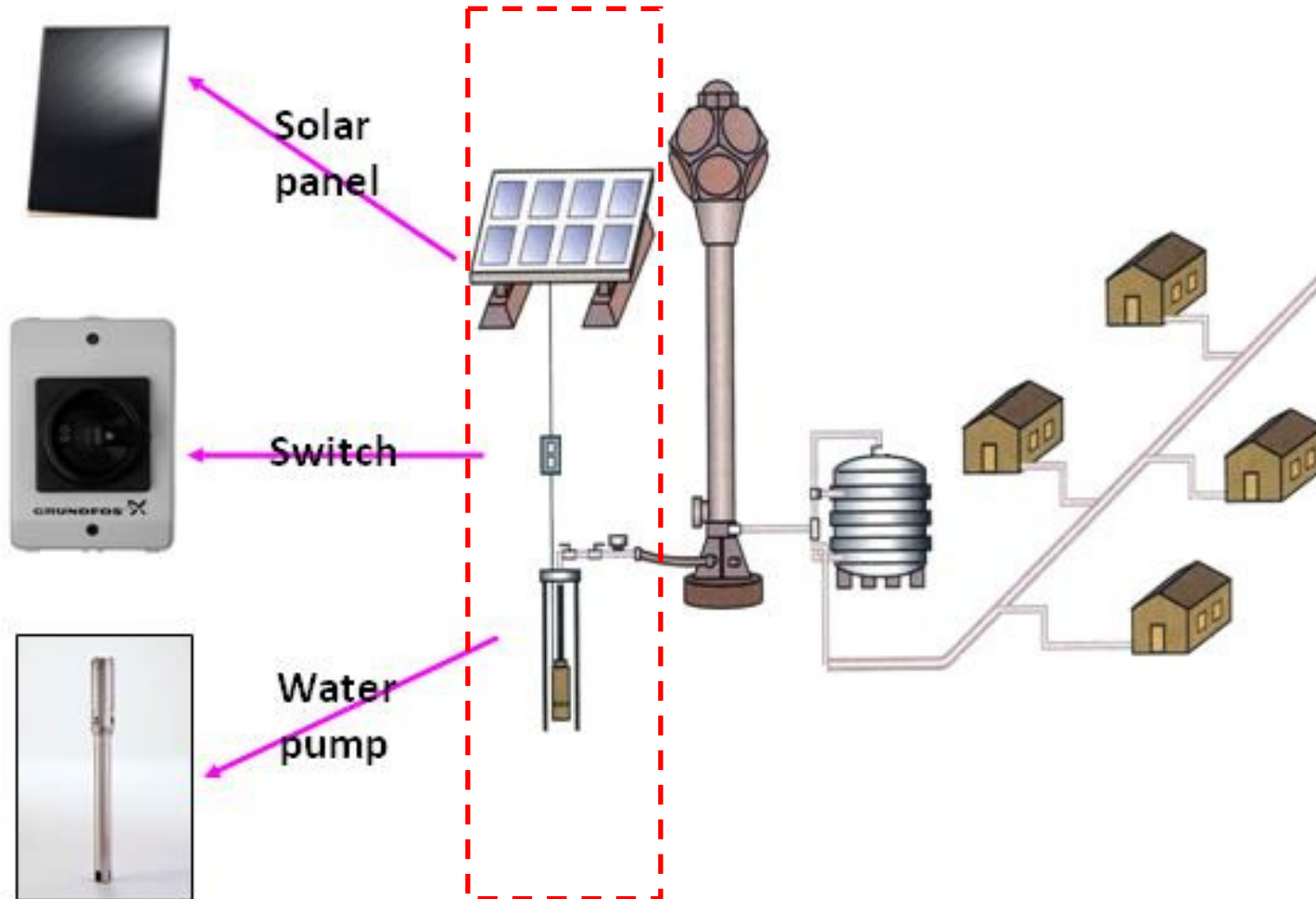


Electrical Energy  
for water supply





# Solar water pump system components





# Solar panel : CIGS



## SUNSHINE CIGS SERIES

### WORLD'S LARGEST CIGS THIN FILM MODULE

Certified according to the standards of IEC61646 and IEC61708  
It offers an excellent power output with high product quality and cost efficiency.

#### Electrical Characteristics

(Standard Test Conditions (STC))

Sunshine CIGS Series	SS1134110K	SS1134120K	SS1134130K	SS1134140K	SS1134150K
Power Output (Wp)	110Wp	120Wp	130Wp	140Wp	150Wp
Max. Power Voltage (Vmp)	16.5V	17.6V	18.8V	19V	20.4V
Max. Power Current (Imp)	3.96A	2.13A	2.17A	2.2A	2.25A
Open Circuit Voltage (Voc)	85.8V	85.25V	87.33V	90.63V	92.07V
Short Circuit Current (Isc)	2.41A	2.62A	2.62A	2.33A	2.39A
Max. System Voltage	1000V	1000V	1000V	1000V	1000V
Power Tolerance	±4%				
Maximum System Voltage	1000Vdc (IEC), 600 Vdc (UL)				
Operating Temperature	-40°C to 85°C				



#### Limited Warranty

##### Product Guarantee

Warranty of the Materials and the Workmanship for 10 years.

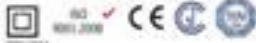
##### Power Guarantee

90% of the nominal rated Power Output for 10 years after shipment.

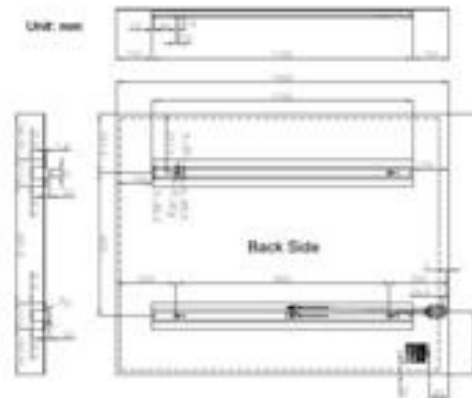
80% of the nominal rated Power Output for 20 years after shipment.

#### Mechanical Characteristics

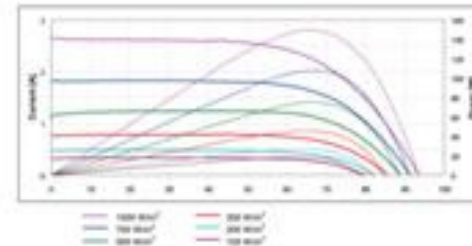
Size	1100mm x 1400mm
Depth	7.7mm
Weight (with/without rail, with/without rail)	12kg / 28.1kg
Type of Frame	with/without rail, with/without rail
Front Cover	Tempered glass
Back Cover	Fluor glass
Encapsulation	Glass / EVA / Glass
Snow/Wind Load (IEC)	2400Pa (with/without rail), 5400Pa (with/without rail)
Junction box, Connector	IP 68, MC-4 compatible
Output Cable	14 AWG (2.5mm <sup>2</sup> )
Cell Type	182 CIGS Cells
Safety Class	B
Fire Rating	Class C



#### Physical Specification



#### IV Curve



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# Water pump



- **Wide voltage range**

- 30-300 VDC
- 90-240 VAC
- High starting torque
- MPPT (Max Power Point Tracking)

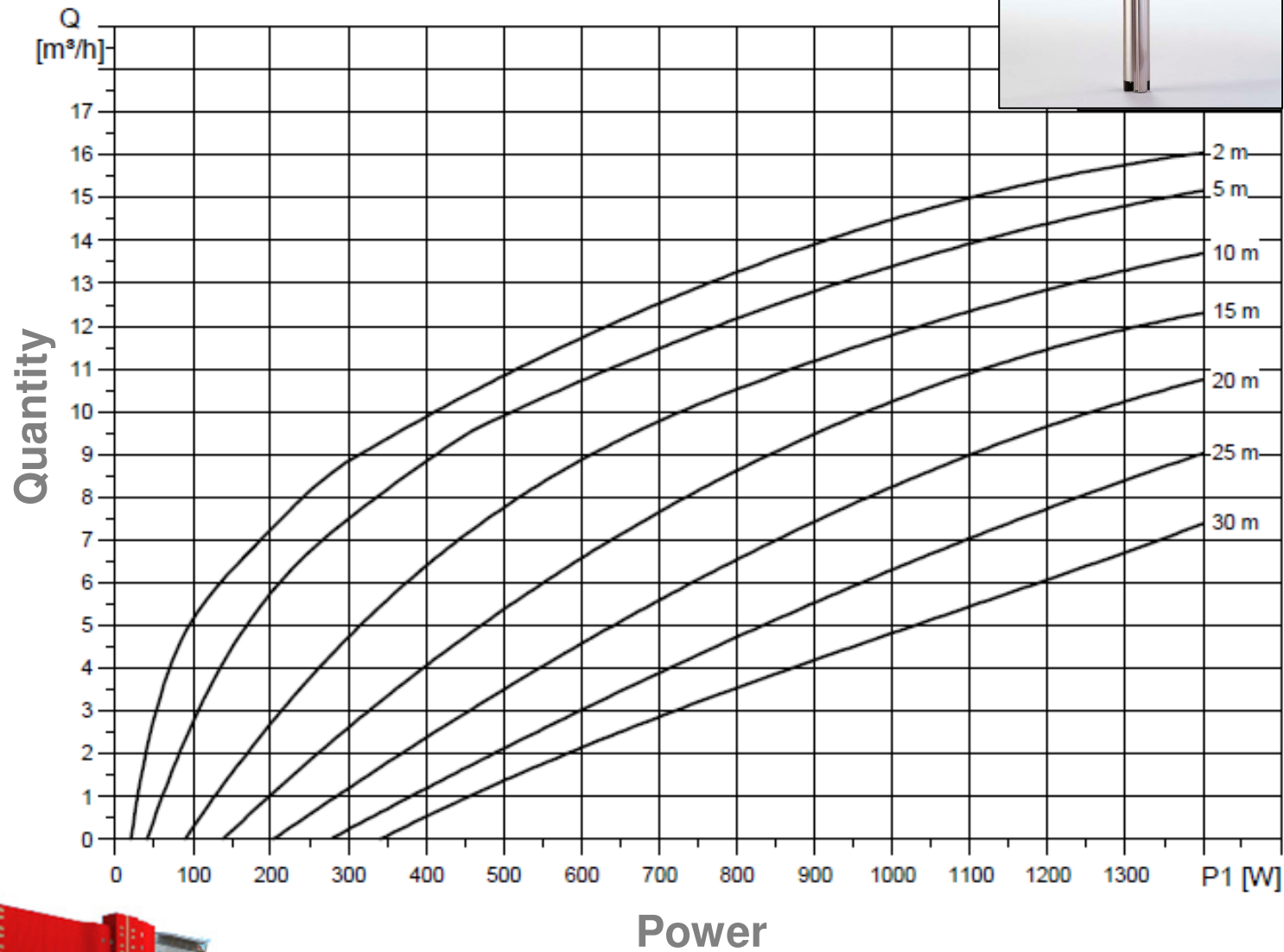
- **Integrated protection against:**

- Polarity mistakes
- Overtemperature
- Over- and undervoltage
- Overload
- Dry-running





# Water pump





# Solar Water-Pump System1

	Description/content
<b>Solar panel</b>	CIGS Thin Film – 130Watt* 3 pcs
<b>Water pump</b>	solar pump - pump head: 0 – 30 m - Rated voltage dc: 30-300VDC - Rated voltage ac: 90-240VAC - Rated Current: 8.4A
	switch box - 1 set
	drop cable , RD TML-B 3G2.5mm2 ( 15-meters)
	wire 6*19/7.1, 1.4404 (20m)
	array to controller wire kit (MC4)
	cable-termination set 3*1.5-6.0mm2 EU
set of cable clips	
<b>Rack</b>	Aluminum extrusion rack for 3pcs CIGS thin film
	DC cable * 10 m

- This system will yield approx :  
(1) 6300 liters per hour @ a 10m head  
Or (2) 400 liters per hour @ a 30m head







# Solar Water-Pump System2

	Description/content
<b>Solar panel</b>	CIGS Thin Film – 130Watt* 6 pcs
<b>Water pump</b>	solar pump - pump head: 0 – 30 m - Rated voltage dc: 30-300V - Rated voltage ac: 90-240VAC - Rated Current: 8.4A
	switch box - 1 set
	drop cable , RD TML-B 3G2.5mm2 ( 15-meters)
	wire 6*19/7.1, 1.4404 (20m)
	array to controller wire kit (MC4)
	cable-termination set 3*1.5-6.0mm2 EU
<b>Rack</b>	set of cable clips
	Aluminum extrusion rack for 6pcs CIGS thin film
	DC cable * 10 m

- This system will yield approx :  
 (1) 10500 liters per hour @ a 10m head  
 Or (2) 3500 liters per hour @ a 30m head





# Solar Water-Pump System3

	Description/content
<b>Solar panel</b>	CIGS Thin Film – 130Watt* 9 pcs
<b>Water pump</b>	solar pump - pump head: 0 – 30 m - Rated voltage dc: 30-300V - Rated voltage ac: 90-240VAC - Rated Current: 8.4A
	switch box - 1 set
	drop cable , RD TML-B 3G2.5mm2 ( 15-meters)
	wire 6*19/7.1, 1.4404 (20m)
	array to controller wire kit (MC4)
	cable-termination set 3*1.5-6.0mm2 EU
<b>Rack</b>	set of cable clips
	Aluminum extrusion rack for 9pcs CIGS thin film
	DC cable * 10 m

- This system will yield approx :  
 (1) 12800 liters per hour @ a 10m head  
 Or (2) 5900 liters per hour @ a 30m head







## Kyrgyzstan



## Malaysia - Dengkil





## Kenya



## Philippines



## Cambodia





# Thailand





## Thailand (Private homes )

### Thailand - Uthai Thani





Remote community,  
Kenya



Children's home,  
Uganda



Outback station,  
Australia



Small villages,  
Kyrgyzstan



Game park, Namibia



National park, Austria



Vineyard, Spain



Cattle farm, Australia



Irrigation in the Alentjo



Energy independence,  
India



Indian tribe, Brazil



Cattle ranch, California



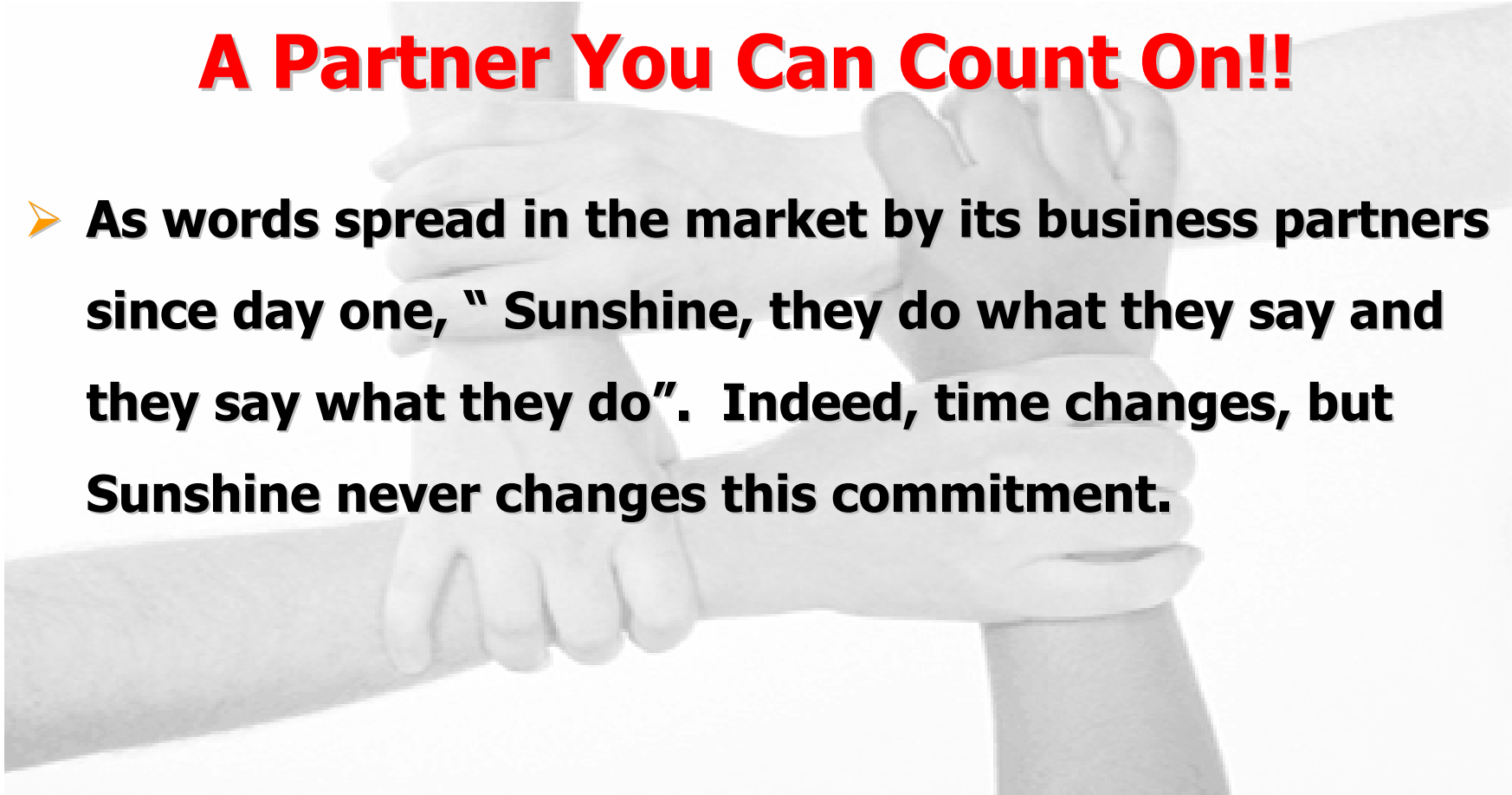




# ***Corporate Philosophy***

## **A Partner You Can Count On!!**

- **As words spread in the market by its business partners since day one, "Sunshine, they do what they say and they say what they do". Indeed, time changes, but Sunshine never changes this commitment.**





***Thank you***

**Sunshine PV Corp.**  
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