

## TD-series solar modules

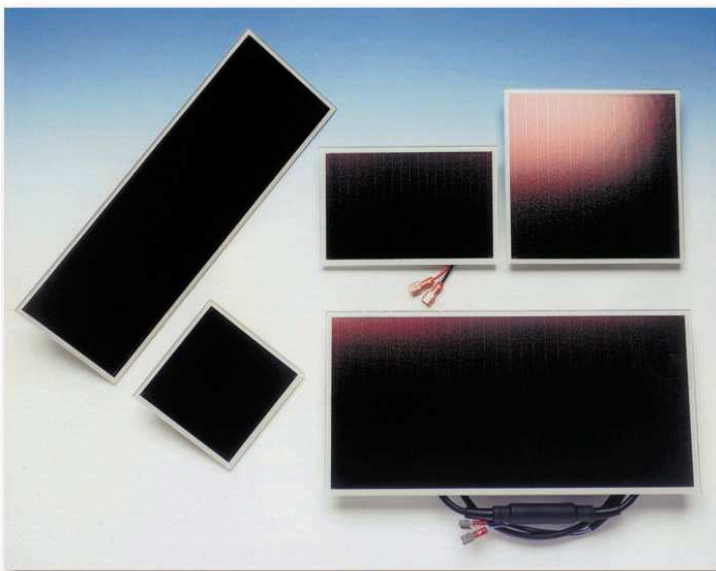
### Weatherproof small photovoltaic modules

Thin film amorphous silicon material

High sensitivity to cloudy and diffusive weathers

Weatherproof protection adapted to any climate

Standard and custom specific voltage and dimensions



- Excellent response at low illumination, down to 30 W/m<sup>2</sup> and up to great sun at 1000 W/m<sup>2</sup> (STC conditions).
- Power up to 10Wc
- Wide voltage range : from 4 to 24 VDC
- Glass substrate, rectangular shapes, thickness 3.2mm.
- EVA/backsheet encapsulation, frameless, with an anti-corrosion 5mm border and electrical output on the back side
- Electrical output by a cable or wires, or charge limitation
- 100% RoHS compatible

-All product ref. : see next page -

### Examples of use



Weather stations



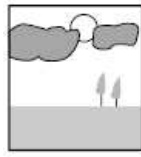
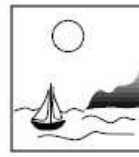
Electrical network controllers



Electrical covers for swimming pools



Emergency Call Units


 200 W/m<sup>2</sup>

 1000 W/m<sup>2</sup>

Product ref.	For batteries	CURRENT / VOLTAGE at maximum power point		Dimensions (mm)			Weight (g)
		Solar irradiance		Length	Width	Thick.*	
		200 W/m <sup>2</sup>	1000 W/m <sup>2</sup>	* except the cable			
<b>10 cells</b>							
10/100/050 TD	4V Lead / 3.6V Ni / 3V Li	4 mA / 4.8 V	21 mA / 5 V	100	50	3.2	50
10/150/100 TD	4V Lead / 3.6V Ni / 3V Li	16 mA / 4.8 V	75 mA / 5 V	150	100	3.2	130
10/150/300 TD	4V Lead / 3.6V Ni / 3V Li	55 mA / 4.8 V	245 mA / 5 V	300	150	3.2	370
<b>14 cells</b>							
14/100/100 TD	6V Lead acid	7 mA / 6.8 V	30 mA / 7.5 V	100	100	3.2	95
14/150/100 TD	6V Lead acid	11 mA / 6.8 V	55 mA / 7.5 V	150	100	3.2	130
14/150/150 TD	6V Lead acid	18 mA / 6.8 V	92 mA / 7.5 V	150	150	3.2	190
14/100/300 TD	6V Lead acid	20 mA / 6.8 V	100 mA / 7.5 V	300	100	3.2	250
14/150/260 TD	6V Lead acid	30 mA / 6.8 V	152 mA / 7.5 V	260	150	3.2	320
14/150/300 TD	6V Lead acid	38 mA / 6.8 V	190 mA / 7.5 V	300	150	3.2	370
<b>18 cells</b>							
18/150/100 TD	7.2V Ni	9 mA / 8.6 V	45 mA / 9 V	150	100	3.2	130
18/300/100 TD	7.2V Ni	18 mA / 8.6 V	92 mA / 9 V	300	100	3.2	250
<b>28 cells</b>							
28/150/100 TD	12V Lead acid	4.5 mA / 14 V	24 mA / 15 V	150	100	3.2	130
28/150/150 TD	12V Lead acid	7 mA / 14 V	35 mA / 15 V	150	150	3.2	190
28/260/150 TD	12V Lead acid	15 mA / 14 V	75 mA / 15 V	260	150	3.2	320
28/260/260 TD	12V Lead acid	28 mA / 14 V	140 mA / 15 V	260	260	3.2	400
28/300/050 TD	12V Lead acid	6 mA / 14V	28 mA / 15 V	300	50	3.2	130
28/300/100 TD	12V Lead acid	12 mA / 14 V	62 mA / 15 V	300	100	3.2	250
28/300/150 TD	12V Lead acid	19 mA / 14 V	100 mA / 15 V	300	150	3.2	370
<b>56 cells</b>							
56/300/150 TD	24V Lead acid	10 mA / 28 V	40 mA / 30 V	300	150	3.2	370

Tolerance ±10% - Irradiation conditions : solar spectrum AM 1.5 and 25°C

Update May 09

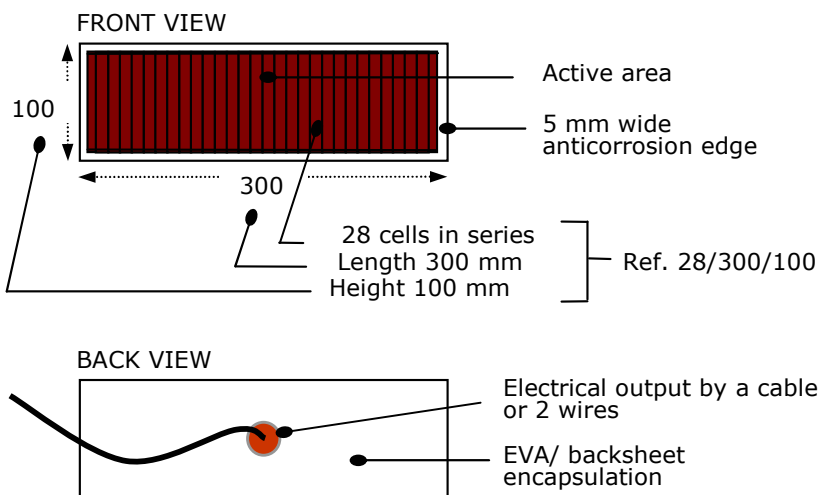
**Another voltage ? Another module size ?  
Send your drawing and electrical requirements**

## Product ref. and technical description

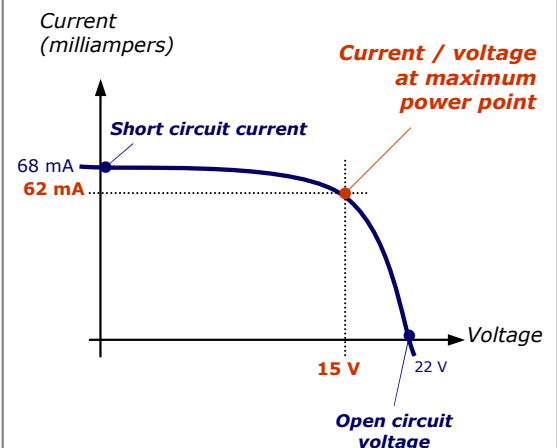
- The active material, **the thin film amorphous silicon**, is produced on a transparent electrode deposited on glass.
- Each module is divided into **individual photovoltaic cells connected in series** by laser scribing.
- The **DC voltage** delivered under light essentially depends on the number of cells in series on the module.

- **The DC current** depends on the surface of an individual cell and on the light intensity.
- The **weatherproof protection** is made of EVA resin and a backsheet with tedlar and polyester, with a 5 mm anti-corrosion border all around the module.

### Example : Module ref. 28/300/100 TD



**Front and back side of the module**  
Dimensions in mms. General tolerance : - 0 / +1 mm



**Current-voltage characteristics**  
at 1000 W/m<sup>2</sup> solar spectrum AM 1.5 and 25°C

## Conditions of use

### • Electrical connections

The electrical output is generally a flexible 1m long 2 x 0.34mm<sup>2</sup> cable, or two 30cm long 0.22mm<sup>2</sup> wires. Another cable, a connector, an overcharge protection (see below) or an other kind of electrical output can be made on request. The modules withstand short circuit without damage.

### • Assembly

It is useless to put these modules in a tight housing : they are weatherproof by themselves. Modules can be glued with a flexible non acidic glue, or attached mechanically without stress, considering the different expansion coefficients of the materials and the temperature changes during use. The modules can be considered as glass on that aspect. SOLEMS also offers specific assembly solutions like screws glued at the back of the modules.

### • Climatic properties

Modules withstand - 40°C / +85°C and 85% relative humidity. The EVA protection is sufficient for all outdoor situations, under normal conditions, in any climate, even salty. They do not withstand chemical attacks nor long time immersion.

### • Warranty & lifetime

Warranty is 5 years, lifetime more than 10 years in the conditions mentioned above.

### • Electrical use

These modules can supply energy to measurements devices, phones, remote controls, wireless data transmission, short duration motor operations ... which electrical consumption are in permanent milliamps or part time Amps. Most of the time a storage item is necessary : Lead acid, Ni, or rechargeable Li batteries can be used with these modules (Li batteries require real smart charge limitation for safety). SOLEMS makes free charge energy evaluations & solar module simulations and can supply complete module / regulator / battery solutions.

### • Charge limitation included (optional)

For 4, 6 or 12V batteries, SOLEMS offers OVERCHARGE PROTECTION device in the output cable of the modules. See our photo on page and corresponding CHARGE LIMITATION SHx SERIES data sheet.