

# INVISIBLE SOLAR ROOFTILE

Photovoltaic module shaped like architectural element made of a polymeric compound non-toxic and recyclable. The module incorporates monocrystalline silicon cells.



## MODULE DATA

Module	
Dimesions (cm)	45 x 17 x 13 x H7
Weight (kg)	1,50
Working temperature (°C)	-40 / +85
Maximum static load (kg/pcs)	500,00
Protection	IP68
Flammability (serf-certification UL 94)	HB
Quantity of Invisible Solar modules for square metre	15

## Electrical performances

Isc - Short circuit current (A)	1,75
Voc - Open circuit voltage (V)	4,41
Pp - Peak power (W)	6,11
I <sub>mp</sub> - Maximum power current (A)	1,63
V <sub>mp</sub> - Maximum power voltage (V)	3,75

## MORE FEATURES

Architectural integration	Resistant to impact
Aesthetic integration	Resistant to pressure
Substitutes architectural objects	Walk-over
Self-cleaning photocatalytic surface	Tollerate atmospheric agents
Depollutin photocatalytic surface	Tollerate chemical solvents

## SIZING EXAMPLE

System (kW)	1
Quantity of Invisible Solar modules (modules)	167
Used area (sqm)	12

This sizing aims to provide an example of the calculation. The definitive system shall be sized by a professional. The sizing data could be subject to variations in accordance with the features of each single project.

## SPECIFICATIONS ON THE ELECTRICAL PERFORMANCES

### Measurement

The electrical performances are determined through tests accomplished at Dyaqua's laboratory with 1000 Wm<sup>2</sup> irradiance, 25°C connection temperature and spectral distribution of irradiance AM=1,5. Electrical performances data of the module represent an average value.

### Artisan made product

The Invisible Solar photovoltaic modules are made through an entirely artisanal manufacturing process; for this reason each module has its own electrical performances, which can be different from the ones of the other modules. Since it is not possible to specify the exact data of each single module, the information included in this technical data sheet provide an average value to size the system.

### Certifications

The Invisible Solar modules are "non-conventional modules" and employ materials that are innovative for the photovoltaic industry. Currently it does not exist a certification scheme suitable for products like Invisible Solar modules, since they have innovative features and a substantial difference compared to conventional photovoltaic modules.

The following testes have been performed on the Invisible Solar modules at Dyaqua's laboratory to determine the technical features of the product:

- 50 cycles with 100°C/h thermal variations and a controlled temperature from -40°C to +95°C;
- 96 hours of corrosion with the salt spray test;
- 40 cycles of humidity and freezing with thermal variations from -40°C to +95°C, and related humidity from 0% to 90% in a controlled temperature chamber.

Measurements are performed using equipments which are calibrated in accordance with Dyaqua's standards.

Dyaqua periodically re-performs all tests that are listed in this document on Invisible Solar modules, which are randomly selected from the production, in order to guarantee a constant quality.



## DISPOSAL AND RECYCLE

The polymeric compound turns into non-toxic and reusable ashes (eg. to make mixture for building materials) by heating it at a temperature of above 600°C.

The incorporated materials will be available for reuse:

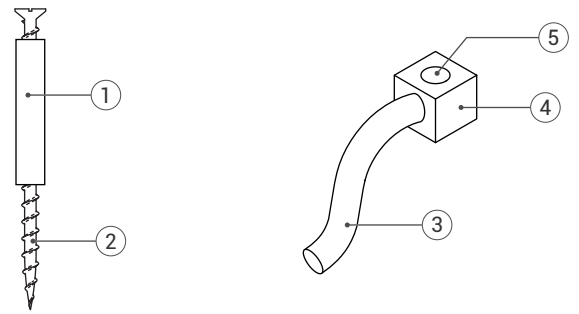
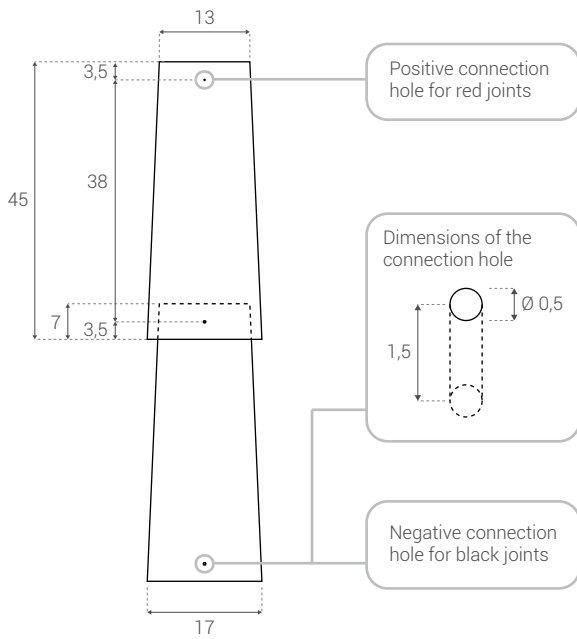
- silicon returns to its original form;
- baked clay powder, stone and anything else will return to their original state;
- copper connection will be melted.

### Dyaqua Srls

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### Contacts

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**Connector**

- 1. Invisible Solar Connector
- 2. Insulated fixing screw

**String Joint (start/end)**

- 3. Photovoltaic cable
- 4. Polymeric box for connection
- 5. Hole for connection and attachment

INSTRUCTION FOR INSTALLATION

