



## TECHNICAL SPECIFICATIONS

SOLARIS™

VDIAMOND TERRACOTTA-M1/A1

**Freesuns Solar Roof tiles are powerful, beautiful and sustainable.**

Every Freesuns roof generates carbon-emission-free solar power creating a return on investment for building owners and a stunning roof for their building.

### Powerful

Freesuns Solar Roof tiles contain photovoltaic cells that convert sunlight into clean energy. Our solar tiles provide maximum photovoltaic coverage for optimal energy production on all types of roofs.

### Beautiful

Freesuns Solar Roof tiles are available in a wide range of colours and finishes, suitable for both modern and traditional architecture. This allows the production of solar energy without compromising the aesthetics of the building.

### Flexible

Our small format tiles, pre-cut in different shapes, allow you to accommodate roof obstacles such as windows and chimneys, adapt to complex roof shapes and thus guarantee maximum coverage of photovoltaic cells.

### Safe

The design of our tiles significantly reduces the risk of fire thanks to a diode present in each tile, a high thermal mass, and monitoring by power optimizers.

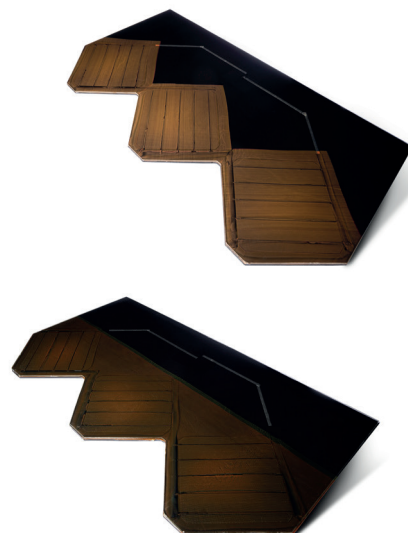
### Return on Investment

By generating a portion of your energy needs for free, the Freesuns Solar Roof has a positive return on investment and will pay for itself over its lifetime - unlike a traditional roof.

### Designed in Switzerland

Freesuns Solar Roof tiles are designed and developed in Switzerland.

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**Suitable for new buildings or the renovation of listed roofs.**



### Easy to install

The tiles are installed by traditional roofers on existing roof structures with existing fixtures.

### Detailed Engineering

With its state-of-the-art software, Freesuns provides a detailed layout of each roof, showing how to install each tile with precision.

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SOLAR  ROOFS



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## VDIAMOND TERRACOTTA-M1/A1

### Physical specifications

|                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| Dimension of the tile (L x H mm)       | – 730 x 400 mm                                  |
| Surface of the visible area (L x H mm) | – 730 x 140 mm                                  |
| Thickness of the tile                  | – 7 mm                                          |
| Number of cells per tile               | – 3                                             |
| Number of tiles per m <sup>2</sup>     | – 9.5                                           |
| Power per m <sup>2</sup>               | – 104.3 Wp (M1) / 97.5 Wp (A1)                  |
| Unit weight                            | – 4.75 kg                                       |
| Weight per m <sup>2</sup>              | – 45.84 kg                                      |
| Cell Type                              | – Monocrystallin PERC<br>5BB 156.75 x 156.75 mm |
| Connector type                         | – MC4 (IP65)                                    |
| Type of glass                          | – Tempered solar glass,<br>front/back           |
| Hail resistance                        | – HW4                                           |
| Max. test load                         | – 5400 Pa                                       |
| (Incl. safety factor of 1.5)           |                                                 |

### Electrical specifications

|                                 | M1        | A1        |
|---------------------------------|-----------|-----------|
| Bypass diode per tile           | – 1       | 1         |
| Power per tile (Pmpp)           | – 10.8 Wp | 10.1 Wp   |
| Voltage (Umpp)                  | – 1.58 V  | 1.59 V    |
| (Impp)                          | – 6.81 A  | 6.34 A    |
| Open Circuit Voltage (Voc)      | – 2.02 V  | 2.03 V    |
| Short Circuit Current (Isc)     | – 7.24 A  | 6.75 A    |
| Tile efficiency                 | – 10.41 % | 9.78 %    |
| Electrical measures             | –         | +/- 5%    |
| Max. system voltage*            | –         | 1000 VDC  |
| Max. reverse current            | –         | 20 A      |
| Temperature coefficient (Voc)*  | –         | -0.36%/K  |
| Temperature coefficient (Isc)*  | –         | +0.06 %/K |
| Temperature coefficient (Pmpp)* | –         | -0.36 %/K |

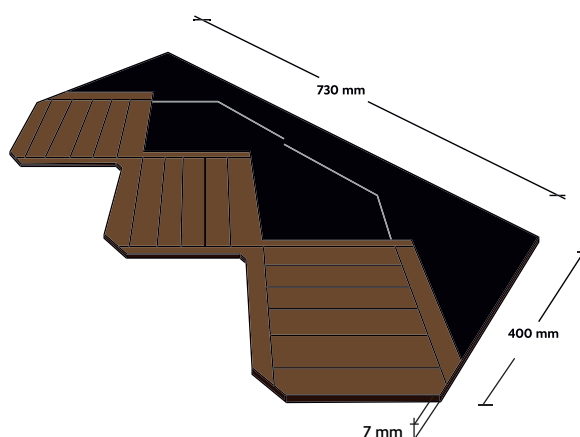
\*Measured coefficients for the cells. Electrical performance characteristics under STC conditions (1000 W/m<sup>2</sup>, 25° C, AM 1.5).

### Appearance

- Earth tone color - terracotta, brown, red

### Warranty

- 10 years on the tiles
- Minimum power guarantee: 90% after 10 years
- Weather resistance guarantee: 40 years



Data subject to change. Tile color may vary.

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