PRODUCT DATA SHEET

Midsummer WAVE

The world's first solar panels for roof tiles

Midsummer WAVE is an ultra-light, flexible, and uniquely wave-shaped thin-film solar panel designed for easy installation on two-barrel roof tiles. It integrates seamlessly without compromising aesthetics or roof functionality and is suitable for private homes, commercial buildings, and historical structures without altering the original architectural design.

The solar panel is only 2 mm thin and consists of 20 thin-film solar cells covering the width of five roof tiles. Weighing just 2.3 kg, it can cover up to 90% of the roof surface, ensuring optimal energy production while fully utilizing the roof area without exceeding the maximum load capacity.

Midsummer ensures quick and complete installations with turnkey solutions. The WAVE can be retrofitted onto existing roof tiles or installed during a complete roof replacement. During installation, the solar panels are placed on top of the roof tiles and secured under the row of tiles above. The panels are then connected in series, row by row, with the wiring discreetly hidden under the tiles. No structural reinforcements, frames, or ballast are required, and there is no need for roof penetration, which preserves the roof's waterproofing.

Our solar panels require minimal maintenance and are safe to walk on, providing secure and easy access to the roof. They are made of durable materials that eliminate the risk of micro-cracks, withstand harsh weather conditions, and protect the roof from UV damage. The bypass diodes between each cell improves shading performance, ensuring that shading on one or more cells only affects the shaded cells rather than the performance of the entire panel.

The WAVE is compatible with Sweden's most popular roof tiles: Palema from Benders, Jönåker from Monier and Mjöbäck, and Ekeby from S:t Eriks.

Swedish innovation manufacutred in Stockholm, Sweden and Bari, Italy

CSR AND SUSTAINABILITY

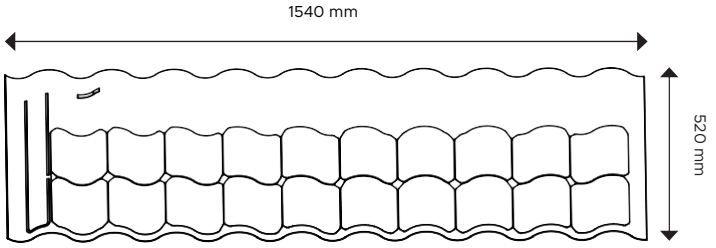
Midsummer ensures CSR-compliant sourcing - has full control over our value chain, from raw materials to final products, enabling full societal responsibility across economic, environmental, and social dimensions.

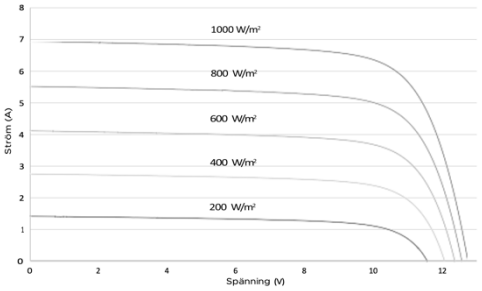
We provide the most sustainable energy solution with the lowest CO2 on the market, 90% lower life cycle emissions compared to silicon panels.

Midsummer solar cells have **98% recyclability** and **uses 63% recycled material.**

Highly efficient CIGS cells without toxic cadmium, due to our unique and innovative machinery, the Midsummer DUO system.

Technical characteristics





ARTICLE INFORMATION	
Number of cells (1 bypass diode between each cell)	20
Weight	2,3kg/panel
Length	1540 mm
Construction length	1500 mm
Width	520 mm
Construction width	340-350 mm
Thickness	2 mm
Roof pitch	Min 22°
Minimum bend radius	O,50 m
Cell type thin-film	CIGS(Cu(In,Ga)Se2)
Product warranty	25 years
Linear power guarantee after 10 years	90%
Linear power guarantee after 25 years	80%
Certifications (TÜV Rheinland certifierad)	IEC 61215 IEC 61730
Color of panel	Black

TECHNICAL DATA	
Nominal Power, P_{MAX}*	60 W
Power/m2	117,6 W/m²
Power/kg	26 W/kg
Maximum Power Voltage, V_{MPP}	10,3 V
Maximum Power Current, I_{MPP}	6,1 A
Open Circuit Voltage, V_{OC}*	12,6 V
Short Circuit Current, I_{SC}*	6,9 A
Maximum Series Fuse Rating	10 A
Maximum System Voltage, V_{DC}	1000 V
Protection class against electrical shock	II
Design Load**	± 1600 Pa
Module operating range	-40 to +85 °C
Temperature coefficient, P_{MAX} (W), γ	-0,3992 % / °C
Temperature coefficient, V_{OC} (V), β	-0,3279 % / °C
Temperature coefficient, I_{SC} (A), α	0,0099 % / °C

* Testing performed at STC (Standard test conditions): solar radiation of 1000 W/m2 with perpendicular incidence towards the module surface, module temperature 25°C, Air mass 1.5 (AM 1.5 spectrum). The tolerance for the value is ±10%, positive-sorted modules +5W /- 0W .
**Test load ± 2400 Pa, Max altitude: 2000 m

Consult Midsummer for a technical assessment of your roof

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