

## TECHNICAL DATASHEET: HeliSol® 436-2000

HeliSol is an innovative organic solar film with unique features, that enables solar power generation, where conventional photovoltaic solutions cannot be used. The solar film is ultra-light, flexible, ultra-thin and comes with an integrated backside adhesive to be easily applied to various surface materials. HeliSol has the lowest carbon footprint of all solar technologies with less than 10 g CO<sub>2</sub>e/kWh, making it a truly green product.



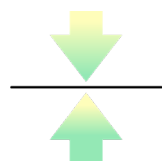
### ULTRA-LIGHT

Weight of less than 2 kg/m<sup>2</sup>. Perfect for lightweight buildings with low rooftop load-bearing capacity.



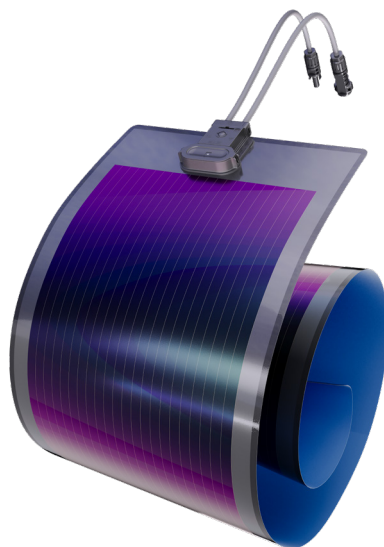
### FLEXIBLE

Minimum bending radius of 50 cm. Ideal for all curved or non-straight surfaces



### ULTRA-THIN

Thickness of less than 2 mm. Seamless integration into application surface.



### TRULY GREEN

Carbon footprint of less than 10 g CO<sub>2</sub>e/kWh. No toxic heavy metals like lead or cadmium, no rare earths, no scarce raw materials.



### EASY-TO-INSTALL

Integrated backside adhesive. Simply gluing on various surfaces. No mounting structure. No rooftop penetration.

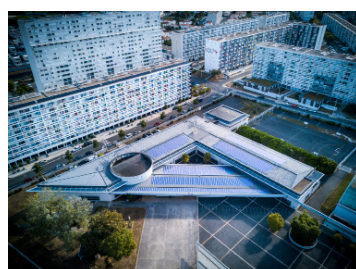


### TEMPERATURE INDEPENDENT

No performance loss at high temperatures till >65 °C. +/- 0 temperature coefficient.

## GENERAL DATA

Configuration	Junction box located on front side of module, integrated backside adhesive on rear side
Cell Type	Organic triple-junction solar cells in serial connection
Back Sheet	Opaque black film with UV- and weather protection with self-adhesive backside tape, delivered with protection liner
Front Sheet	Polymeric film with optimized UV- and weather protection
Fixation	Self-adhesive tape sticks durably on glass, metal/steel, concrete, or other materials on request
Packaging	12 rolled modules per box, 8 boxes per pallet, 96 modules per pallet



## ELECTRICAL DATA AT STC

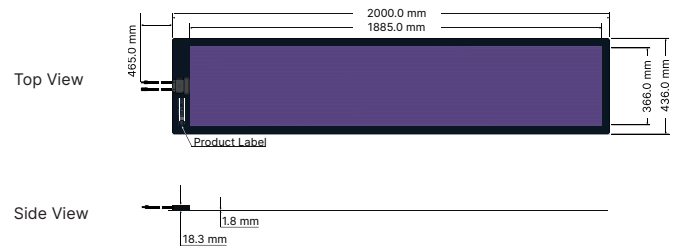
	HeliaSol 436-2000-50	HeliaSol 436-2000-55
Nominal Power	50 W	55 W
Sorting of P <sub>MPP</sub>	+5/-0 W	+5/-0 W
Aperture Efficiency	7.2 %	8.0 %
Voltage at P <sub>MPP</sub> (V <sub>MPP</sub> )	42.6 V	44.1 V
Current at P <sub>MPP</sub> (I <sub>MPP</sub> )	1.24 A	1.31 A
Open Circuit Voltage (V <sub>OC</sub> )	55.7 V	55.7 V
Short Circuit Current (I <sub>SC</sub> )	1.62 A	1.65 A
Overcurrent Protection Rating	2.1 A	2.1 A

STC: Irradiance 1000 W/m<sup>2</sup>, Module Temperature 25 °C, AM1.5 spectrum. Measurement tolerance of P<sub>MPP</sub>, I<sub>SC</sub> and V<sub>OC</sub> does not exceed ±10%.  
Nominal power is the minimum amount of power at STC and it is not equal to V<sub>MPP</sub> \* I<sub>MPP</sub> in the electrical data table

## MECHANICAL SPECIFICATIONS

Module Width	436 mm
Module Length	2000 mm
Module Thickness	1.8 mm (solar film) 18.3 mm (solar film plus junction box)
Min. Bending Radius	50 cm (unidirectional curved surfaces only)
Module Weight	1.6 kg
Load Rating	Design load: ± 1600 Pa Test load: ± 2400 Pa Safety factor: 1.5

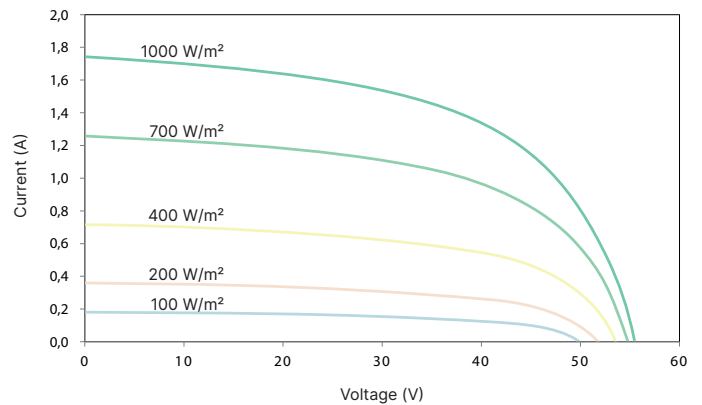
## TECHNICAL DRAWING



## THERMAL CHARACTERISTICS

Operating Temperatures	-40 ... +85 °C
Temperature Coefficient P <sub>MPP</sub>	+0.00 %/°C, from 25°C up to 65 °C -0.11 %/°C, from 65°C to 85 °C
Temperature Coefficient I <sub>SC</sub>	+0.07 %/°C
Temperature Coefficient V <sub>OC</sub>	-0.20 %/°C

## I-V CURVES



## INSTALLATION

Installation Conditions	Dry and clean conditions, temperature above 8 °C
Max. Altitude	2000 m
Mounting Surface	Flat or bent in one axis (radius ≥ 50 cm) Slope min. 1° and max. 90°

## SYSTEM INTEGRATION

Max. System Voltage	1000 V
Bypass Diodes	1 per module
Electrical Connection	TE Connectivity PV4-S connector 46 cm cable length
Class	II (IEC 61140)
Junction Box	IP 67
Inverter Recommendation	Compatibility with most commercially available inverters

## STANDARDS AND NORMS

PV Standards	IEC 61730 compliant
Fire Classification	EN 13501-01 class E in combination with metal, concrete or polymeric waterproofing sheet with Fire class E acc. EN 13501-1 or higher. See the User Guide for more details. Fire tests were performed at the Fire laboratory of MPA Dresden GmbH.
Compliances	CE conform; WEEE compliant
Warranty	According to Terms & Conditions

## DISCLAIMER

The information included in this datasheet is subject to change without notice and is provided for informational purposes only. Please contact Heliatek about the availability of modules in the shown power classes.

