



hero.flat is a photovoltaic module with an integrated and patented cooling system. This unique cooling system maximizes the electricity yield and at the same time also produces heat. The roof thus rises to the highest technological and aesthetic level. The **hero.flat** module is suitable for surfaces (roof and facades) in the private or commercial area.



Maximum flexibility

The compact module size enables maximum flexibility and utilization of every area - whether roof or facade.



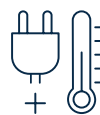
Maximum electricity yield

The efficiency of the modules is increased by up to 20% thanks to the patented cooling system.



Longer life span

The patented cooling system prevents the solar cells from overheating and increases the life span of the modules.



Electricity and heat

The electricity and heat requirements of a single-family household are covered many times over by the more efficient energy production.



Integrated insulation

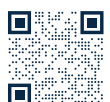
The integrated insulation layer prevents the ingress of heat in summer. This protects the roof substructure.



Aesthetic design

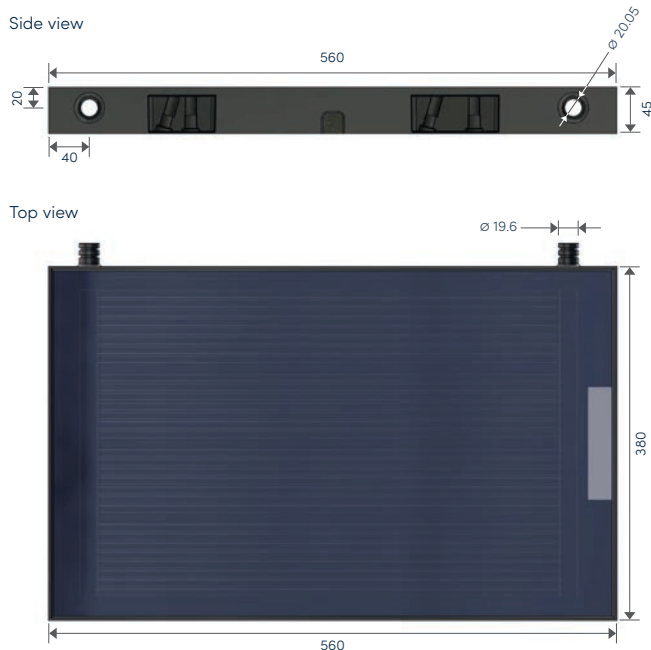
The elegant and incomparable design enhances every facade and every roof and enables undreamt-of architectural freedom.

More information:



hero.flat Module specifications

Technical drawing



Data in [mm]

Technical data hero.flat module	Unit	hero.flat
Number of Modules per m ²		4.7
Module base area (L/W)	mm	45 × 380 × 560
Weight (empty)	kg	3.5
Weight (filled)	kg	4.9
Glass surface	mm	3.2
Color		Anthracite
Nominal operating temperature (NOCT)	°C	approx. - 40 to +85
Max. wind/snow load	N/m ²	up to 2400/5400
Max. hailstorm		Protection class 3
Peak performance module	Wp	125
Peak performance electricity	Wp	30
Peak performance heat	Wp	95
Yield electricity/module	kWh/year	~ 36
Yield heat/module	kWh/year	~ 60
Yield electricity/m ²	kWh/year	~ 169
Yield heat/m ²	kWh/year	~ 282
Efficiency gain due to cooling system	%	~ 20
Product warranty	years	15
Performance warranty PV (>= 80%)	years	25
Performance warranty cooling system	years	10
Weather resistance warranty	years	25
Standards & certificates		IEC 61215, IEC 61730, Solar-KEYMARK, CE, RoHS compliant

Abbreviations

A	Ampere - current intensity
AA	Visible, unshaded absorber area
Asol	Maximum projection area
Impp	Instantaneous maximum current
Isc	Short circuit current
N/m ²	Newton per square meter - force
NOCT	Temperature of the solar cell during normal operation
kWh/year	Kilowatt hours per year

Technical data photovoltaic	Unit	hero.flat
Nominal power Pmpp	Wp	30
Open circuit voltage Uoc	V	8.12
Voltage Umpp	V	6.72
Short circuit current Isc	A	4.55
Electricity Impp	A	5.71
Efficiency	%	20
Temperature coefficient for Uoc	% / °C	- 0.30
Temperature coefficient for Isc	% / °C	- 0.05
Temperature coefficient for Pmpp	% / °C	- 0.39
Max. System voltage	V	1000
Max. Reverse current	A	20
Max. String fuse	A	20
Number of half cells		12
Cell type		S-PERC
Connector type		MC4
Connection cable	mm ²	4

Technical data solar thermal	Unit	hero.flat
Gross area	m ²	0.21
Aperture area ASol = Absorber area AA	m ²	0.160
Optical efficiency*	%	65
Linear heat transfer coefficient*	W/(m ² K)	4.75
Stagnation temperature	°C	70
Liquid volume per module	Liter	1.4
Permissible operating overpressure Pmax	Bar	0.25
Connection type		Open system (pipe)
Connection	inch	1/2
Thermal insulation back wall (optional)	mm	15

P _{max}	Maximum system pressure
P _{mpp}	Rated power of the module
U _{mpp}	Instantaneous maximum voltage or nominal voltage of the module
U _{oc}	Voltage in volts without load, or open circuit voltage
V	Volt - electrical voltage
W/(m ² K)	Watts per square meter and Kelvin
Wp	Watt Peak - Maximum achievable watts
*	Parameters of the efficiency curve are related to the aperture area