

 **DUALSUN**



French manufacturer of solar panels

SPRING hybrid solar panel (PVT)<sup>®</sup>  
designed and manufactured in France  
(certified Made in France), produces both  
electricity and hot water.

## SPRING<sup>®</sup> 425 Shingle Black



### PHOTOVOLTAIC FRONT FACE

High performance monocrystalline cells cooled  
by water circulation  
Anti-reflective glass ensuring high performance  
even in diffused light

### THERMAL REAR FACE

Hot water production thanks to an ultra-thin  
patented heat exchanger completely integrated  
into the panel

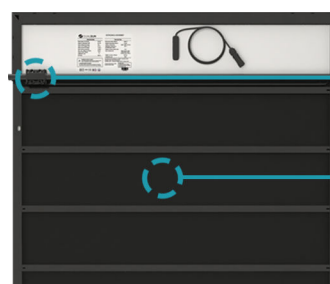
**DualBoost<sup>®</sup>** : Photovoltaic efficiency boost by  
cooling cells



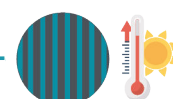
### WARRANTY

French manufacturer  
10 year product warranty, starting from the  
activation of the guarantees\*  
25 year linear performance warranty on  
photovoltaic performance

\* Warranty activation conditions on [dualsun.com](https://dualsun.com)



DualQuickfit



### QUALITY & SAFETY



- CE marking
- IEC 61215 & 61730 en cours
- SOLAR KEYMARK en cours
- CEC listed / UL 1703 in progress / ICC-SRCC  
n°10002137

### DUALQUICKFIT<sup>®</sup>

Patented Plug & Play hydraulic connection  
system for faster and more reliable installation  
of the SPRING<sup>®</sup> panel



### INDUSTRY OF THE FUTURE LABEL

Engineered in France :  
R&D center in Marseille  
Made in France (certificate En cours):  
DIN EN ISO 9001: 2015 certified factory

### COMPATIBLE PANEL FOR APPLICATIONS:

DHW



HP

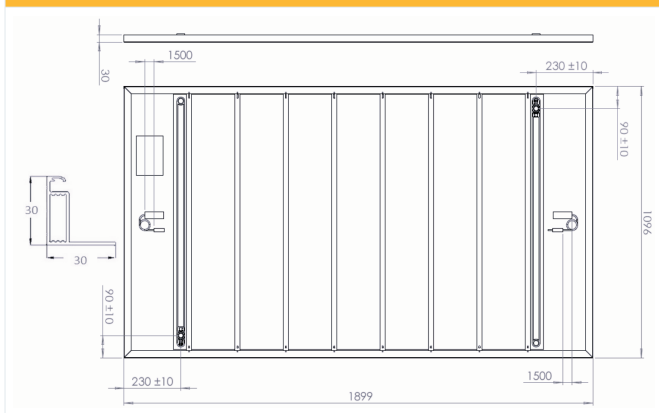


POOL



 Recyclable panel

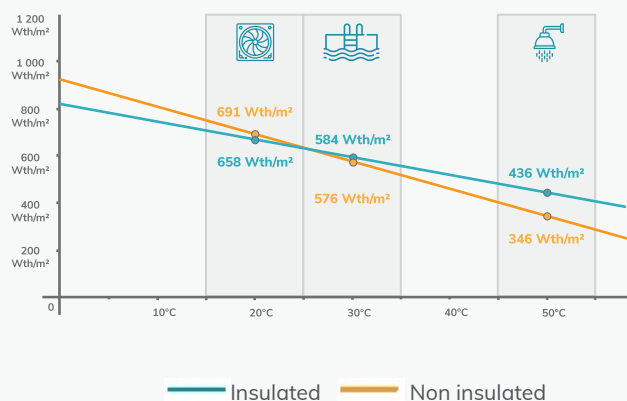
## Dimensions



## Physical characteristics

Length	1899 mm	
Width	1096 mm	
Thickness	30 mm	
	<b>Non insulated</b>	<b>Insulated</b>
Empty / full weight	28,7 / 34,6 kg	29,7 / 35,6 kg
Number of cells	320	
Cell type	PERC Monocrystalline	
Connectors	MC4 / MC4 compatible	
Cable length	1500 mm	
Maximum load	5400 Pa (snow) / 2400 Pa (wind)	
Frame / Backsheet	Black anodised aluminium / Black	

## Thermal power output as a function of the temperature of the water in the panel and by application



Performances derived from the values  $a_0$ ,  $a_1$  (wind  $u = 1 \text{ m/s}$ ) in STC conditions ( $T = 25^\circ \text{C}$ ,  $G = 1000 \text{ W/m}^2$ )

## Photovoltaic characteristics

Nominal power	425 W
Photovoltaic yield at 25 years	84,8%
Output power tolerance	0/+3%
Module efficiency	20,4 %
Rated voltage ( $V_{mpp}$ )	36,0 V
Rated current ( $I_{mpp}$ )	11,81 A
Open circuit voltage ( $V_{oc}$ )	43,4 V
Short-circuit current ( $I_{sc}$ )	12,56 A
Voltage temperature coefficient ( $\mu V_{oc}$ )	-0,27 %/°K
Current temperature coefficient ( $\mu I_{sc}$ )	0,04 %/°K
Power temperature coefficient ( $\mu P_{mpp}$ )	-0,34 %/°K
Maximum system voltage	1500 VDC
Maximum reverse current	25 A
NMOT	45 +/- 2°C
Application class	Class II

\* STC conditions (AM 1.5 - 1000 W/m<sup>2</sup> - 25°C)  
Measurement tolerance: +/- 3%

## Thermal characteristics

Thermal power	660 Wth/m <sup>2</sup> W <sub>th</sub> /m <sup>2</sup> *	
Collector area	2,08 m <sup>2</sup>	
Heat exchanger volume	5,9 L	
Max operating pressure	1,5 bar	
Pressure drop	<b>Portrait</b>	<b>Landscape</b>
(Pa   mmH2O)	at 60 L/h 186   19	441   45
	at 100 L/h 461   47	961   98
Hydraulic inlet / outlet	DualQuickfit® fitting	
	<b>Non insulated</b>	<b>Insulated</b>
Stagnation temperature	80°C	90°C
Optical efficiency $a_0$	63,3 %**	62,1 %**
Coefficient $a_1$	11,5 W/K/m <sup>2</sup> **	7,4 W/K/m <sup>2</sup> **
Coefficient $a_2$	0 W/(m <sup>2</sup> .K <sup>2</sup> )**	0 W/(m <sup>2</sup> .K <sup>2</sup> )**

\* Thermal power calculated with wind  $u = 0 \text{ m/s}$ ,  $DT = 0$ ,  $G = 1000 \text{ W/m}^2$

\*\* The coefficients  $a_0$ ,  $a_1$  and  $a_2$  result from EN 9806: 2017 certification tests for solar collectors without glazing carried out by KIWA for a wind speed  $u = 1 \text{ m/s}$ :  $a_0 = n_0 - c_6^* u^2$ ;  $a_1 = c_1 + c_3^* u^2$ ;  $u' = u - 3$

Find the installation instructions and mounting systems in our resource area:



v1.0 – September 2022

DSTI425M12-B320SBB7 / DSTN425M12-B320SBB7