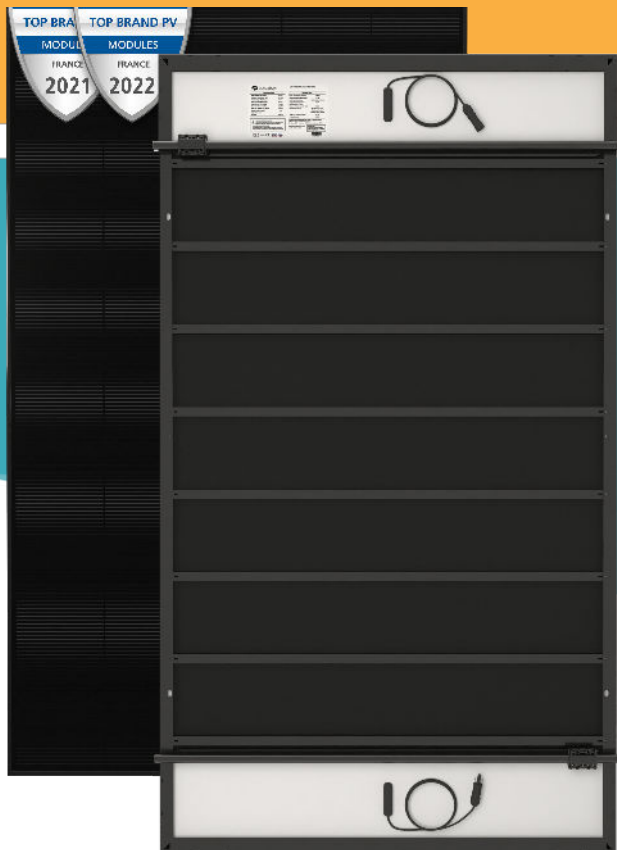


SPRING hybrid solar panel (PVT)<sup>®</sup> designed and manufactured in France (certified Made in France), produces both electricity and hot water.

## 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



### WARRANTY

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

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



### QUALITY & SAFETY

- IEC 61215 & 61730 DE 2-038845 + DE 2-039244
- SOLAR KEYMARK n°011-7S3167 P + n°011-7S3168 P
- CSA certificat (UL 61730) : N°80150682
- ICC-SRCC : Pending validation



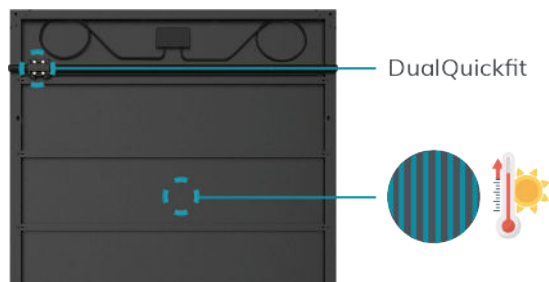
### INDUSTRY OF THE FUTURE LABEL

Made in France (certificate Pending) :  
DIN EN ISO 9001: 2015 certified factory

### 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



### DUALQUICKFIT<sup>®</sup>

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



### COMPATIBLE PANEL FOR APPLICATIONS:

DHW



HP

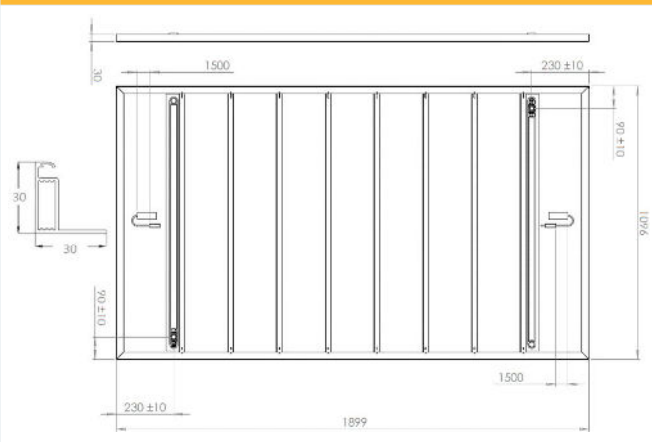


POOL





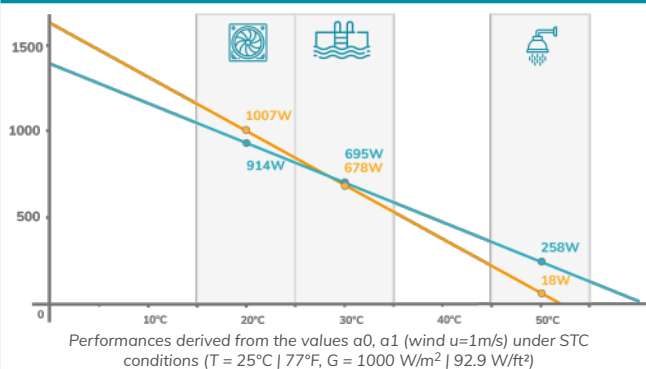
## Dimensions



## Physical characteristics

Length	74,76 inch (1899 mm)	
Width	43.15 inch (1096 mm)	
Thickness	1,18 inch (30 mm)	
	<b>Non insulated</b>	<b>Insulated</b>
Empty / full weight	(63,0 / 74,0 lbs)	(64,7 / 75,8 lbs)
Number of cells	320	
Cell type	PERC Monocrystalline	
Connectors	MC4 Original Stäubli	
Cable length	1500 mm (59 inch)	
Maximum load	Snow: 0.957 PSI (5400 Pa) Wind: 0.522 PSI (2400 Pa)	
Frame / Backsheet	Black anodised aluminium / Black	

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



## Photovoltaic characteristics

Nominal power	425 W
Photovoltaic yield at 25 years	84,8%
Output power tolerance	0/+3%
Module minimum guaranteed efficiency	20,4 %
Rated voltage ( $V_{\text{mpp}}$ )	36,0 V
Rated current ( $I_{\text{mpp}}$ )	11,81 A
Open circuit voltage ( $V_{\text{oc}}$ )	43,4 V
Short-circuit current ( $I_{\text{sc}}$ )	12,56 A
Voltage temperature coefficient ( $\mu V_{\text{oc}}$ )	-0,27 %/°K
Current temperature coefficient ( $\mu I_{\text{sc}}$ )	0,04 %/°K
Power temperature coefficient ( $\mu P_{\text{mpp}}$ )	-0,34 %/°K
Maximum system voltage	1500 VDC
Maximum reverse current	25 A
NMOT	(113 +/-35,6°F)
Application class	II

\* STC Conditions (AM 1,5 – 1000 W/m<sup>2</sup> | 92,9 W/ft<sup>2</sup> - 25°C | 77°F)  
Measurement tolerance: +/- 3%

## Thermal characteristics

Thermal power	418W <sub>th</sub> /m <sup>2</sup> 133Btu/ft <sup>2</sup> *	869 W <sub>th</sub> /panel
Collector area	21,53 ft <sup>2</sup> (2,08 m <sup>2</sup> )	
Heat exchanger volume	1,32 gal (5 L)	
Max operating pressure	21,7 PSI (1,5 bar)	
Pressure drop	<b>Portrait</b>	<b>Landscape</b>
inch H <sub>2</sub> O	at 60 L/h 0,75 (19)	45 (1,77)
(mm H <sub>2</sub> O)	at 100 L/h 47 (1,85)	3,86 (98)
	<b>Non insulated</b>	<b>Insulated</b>
Stagnation temperature	176°F (80°C)	194°F (90°C)
Optical efficiency $a_0$	40.5 %**	38.7 %**
Coefficient $a_1$	15.9 W/K/m <sup>2</sup> **	10,5 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> )**

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

\*\* 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  $u = 1 \text{ m/s}$ :  $a_0 = \eta_0 - \nu s_6^* u'$ ;  $a_1 = c_1 + c_3^* u'$ ;  $u' = u - 3$

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

