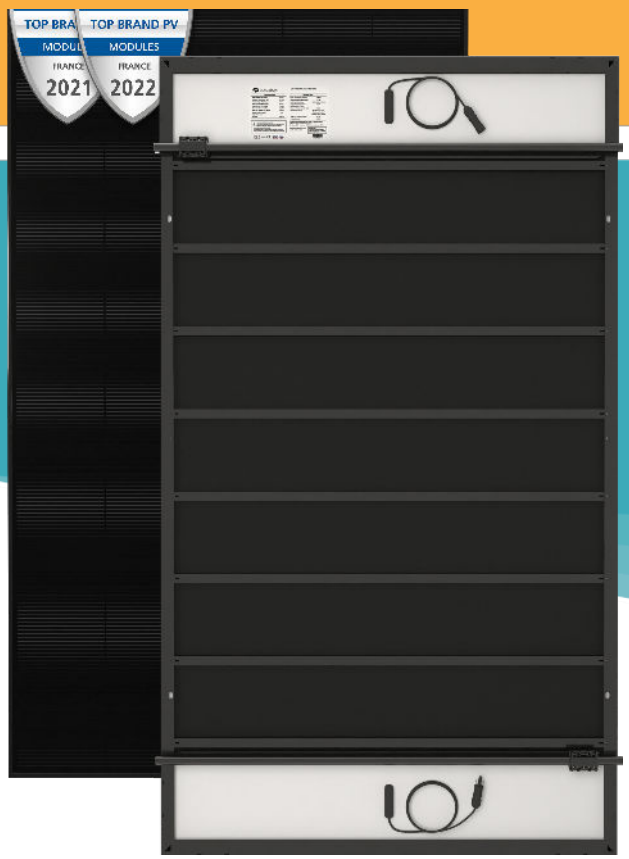


DUALSUN

French manufacturer of solar panels

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

SPRING® 425 Shingle Black

PHOTOVOLTAIC FRONT

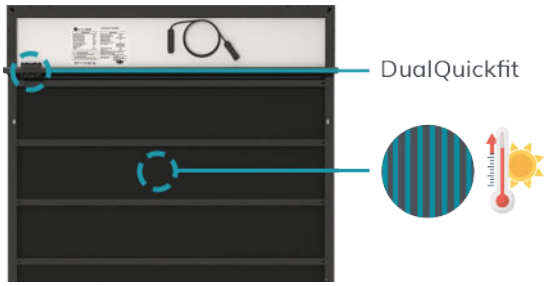
High performance monocrystalline cells cooled by water circulation

Anti-reflective glass guarantees high performance even in diffuse light

THERMAL REAR

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

DualBoost : Photovoltaic efficiency boost by cooling cells



WARRANTY

French manufacturer

10 year product warranty from activation of warranties*

30 year linear performance warranty on photovoltaïc efficiency

* Warranty activation conditions on dualsun.com

QUALITY & SAFETY

- Excellent hail resistance (RG4)
- IEC 61215 & 61730 DE 2-038845 + DE 2-039244
- SOLAR KEYMARK n°011-7S3167 P + n°011-7S3168 P
- CEC listed / UL 1703 N°80150682 / ICC-SRCC No./10002165 / No./10002166

DUALQUICKFIT®

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

INDUSTRY OF THE FUTURE LABEL

Engineered in France :

R&D center in Marseille

Made in France (certificate FR-IMF-2023-375):

DIN EN ISO 9001: 2015 certified factory

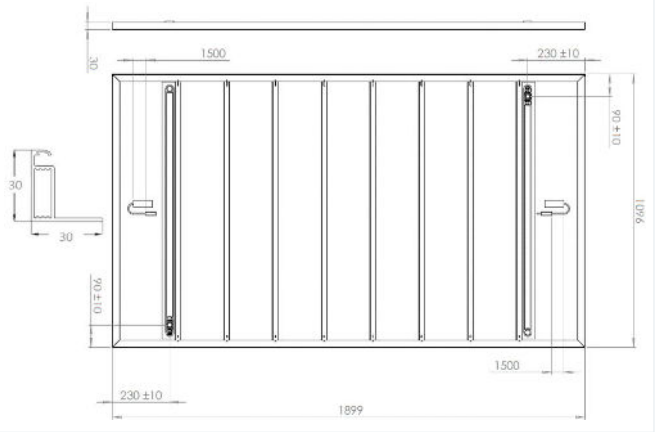
COMPATIBLE PANEL FOR APPLICATIONS:

DHW	HP	POOL

Soren Recyclable panel

SPRING® 425 Shingle Black

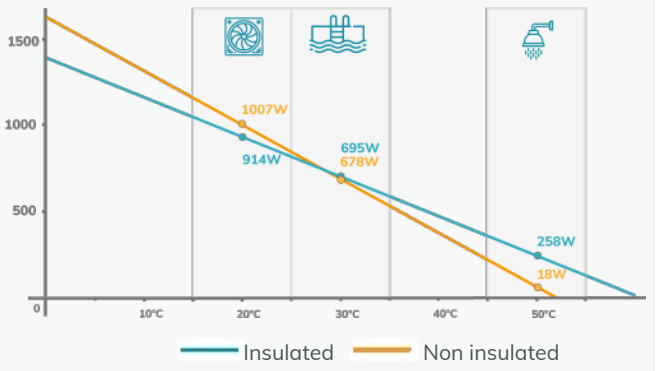
Dimensions



Physical characteristics

Length	1899 mm	
Width	1096 mm	
Thickness	30 mm	
	Non insulated	**Insulated**
Empty / full weight	28,6 / 33,6 kg	29,4 / 34,4 kg
Number of cells	320	
Cell type	PERC Monocrystalline	
Connectors	MC4 Original Stäubli	
Cable length	1500 mm	
Maximum load	6600 Pa (snow) / 3600 Pa (wind)	
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



Performances derived from the values a0, a1 (wind u = 0 m / s) in STC conditions (T = 25 ° C, G = 1000 W / m²)

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_{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 (μV_{oc})	-0,27 %/°K
Current temperature coefficient (μI_{sc})	0,04 %/°K
Power temperature coefficient (μP_{mpp})	-0,34 %/°K
Maximum system voltage	1500 VDC
Maximum reverse current	25A
NMOT	45 +/- 2°C
Application class	II

* STC conditions (AM 1.5 - 1000 W/m² - 25°C)
Measurement tolerance: +/- 3%

Thermal characteristics

Thermal power		418 W_{th}/m²*	869 W_{th}/pn
Collector area		2,08 m²	
Heat exchanger volume		5 L	
Max operating pressure		1,5 bar	
Pressure drop		**Portrait**	**Landscape**
(Pa | mmH20)	at 60 L/h	186 | 19	441 | 45
	at 100 L/h	461 | 47	961 | 98
Hydraulic inlet / outlet		DualQuickft® fitting	
		Non insulated	**Insulated**
Stagnation temperature		80°C	90°C
Optical efficiency a_0		40.5 %**	39.07 %**
Coefficient a_1		15.9 W/K/m²**	8.6 W/K/m²**
Coefficient a_2		0 W/(m².K²)**	0 W/(m².K²)**

* Thermal power calculated with wind u = 1.3 m/s, DT = 0, G = 1000 W/m²

** 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 m/s: $a_0 = n_0 - c_6*u'$; $a_1 = c_1 + c_3* u'$; $u' = u - 3$**

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

v1.9 – January 2024
DSTI425M12-B320SBB7 / DSTN425M12-B320SBB7

DUALSUN
2 rue Marc Donadille - 13013 Marseille - FRANCE
+33 4 13 41 53 70
contact@dualsun.fr
dualsun.com