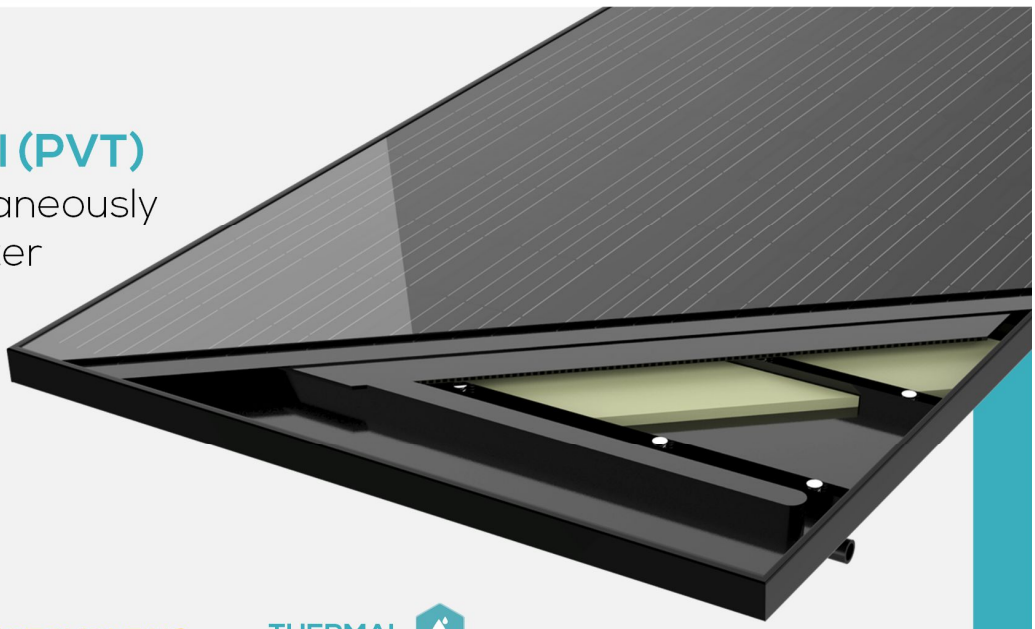
DUALSUN 310 Wp

SPRING

A hybrid solar panel (PVT)

that generates simultaneously electricity and hot water



MADE IN FRANCE

PHOTOVOLTAIC

Dimensions of a standard photovoltaic panel (60 6-inch cells)

High-efficiency monocrystalline cells, cooled by water circulation on backside of panel

Nominal PV power : 310 Wp

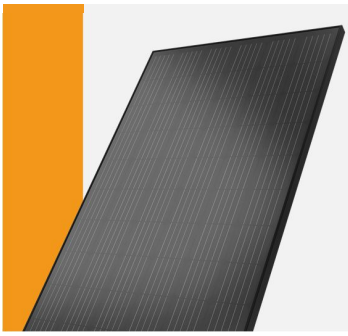
THERMAL

Ultra-thin heat exchanger, completely integrated into panel (DualHeat® patented design)

Excellent heat transfer between photovoltaic frontside and water circulation on backside, for an increased photovoltaic efficiency (DualBoost® effect)

Thermal power output : 570 W/m^2 *

* Performances measured during Solar Keymark certification



FLASH

A high-performance photovoltaic panel (PV)

100% identical to DualSun Spring hybrid panels

- Same dimensions
- Same appearance
- Same electrical characteristics

Product warranty:
Up to 20-year product warranty on the Flash
And 10-year for the Spring
25-year PV power warranty

Certified IEC 61215 & 61730 and Solar Keymark (Europe)
CEC (Australia), UL 1703 (USA)

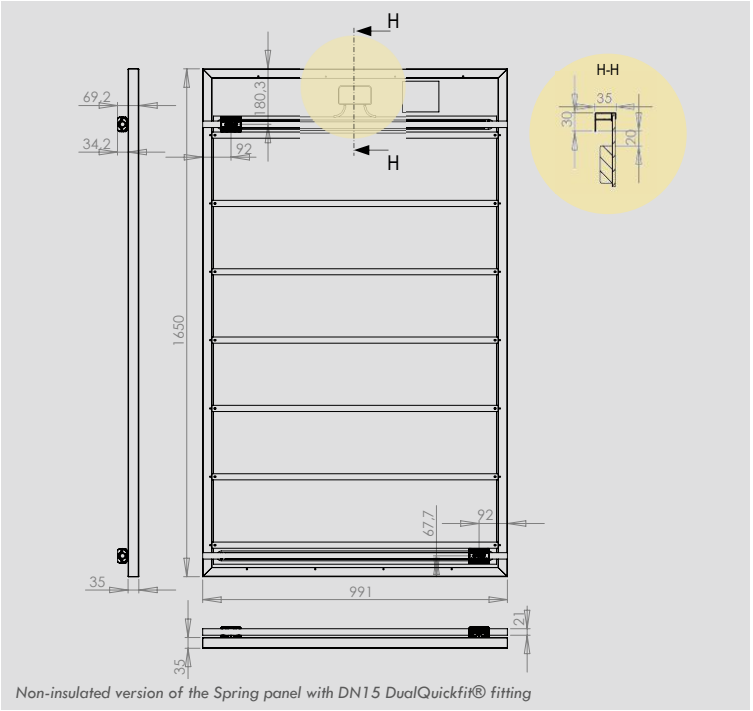
Spring 310M Non-Insulated : DualSun – 310M – 60 – 3BBPN
Spring 310M Insulated : DualSun – 310M – 60 – 3BBPI
Flash 310M : DualSun – 310M – 60 – 0BBP

TECHNICAL DATA

GENERAL DATA (SPRING & FLASH)			
Length	1650 mm		
Width	991 mm		
Frame width	35 mm		
Frame color / backsheet	Black / Black		
Maximum load	5400 Pa (snow) / 2400 Pa (wind)		
	Flash	Spring NI*	Spring I*
Weight empty / filled	16,2 kg / NA	22 / 27 kg	22,8 / 27,8 kg

* NI = Non-Insulated, I = Insulated

ELECTRICAL DATA (SPRING & FLASH)	
Number of cells per module	60
Cell type	Monocrystalline
Nominal power (P_{mpp})	310 Wp
Module efficiency	19 %
Power tolerance	+/- 3 %
Rated voltage (V_{mpp})	33.1 V
Rated current (I_{mpp})	9.36 A
Open circuit voltage (V_{oc})	40.5 V
Short circuit current (I_{sc})	10,02 A
Maximum system voltage	1000 V DC
Reverse current load	20 A
NOCT	45 ± 2°C
Connectors	MC4
Application class	Class II
Voltage temperature coefficient (μV_{oc})	-0.286 %/°C
Current temperature coefficient (μI_{sc})	0.057 %/°C
Power temperature coefficient (μP_{mpp})	-0.370 %/°C

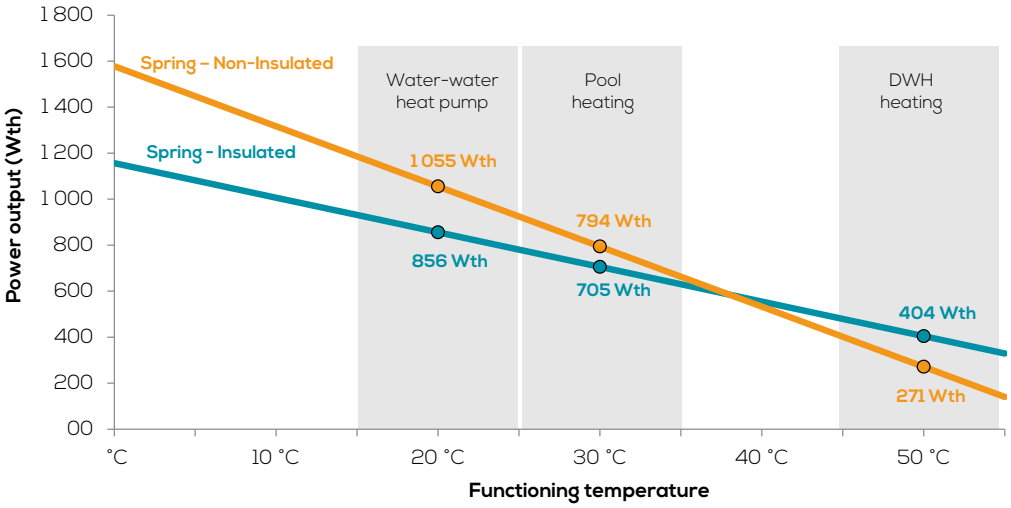


Non-insulated version of the Spring panel with DN15 DualQuickfit® fitting

THERMAL DATA (SPRING only)			
Gross area	1,635 m²		
Volume of heat transfer liquid	5 L		
Maximum operating pressure	1,2 bar		
Pressure loss per panel (Pa | *mmWS*)	Portrait	Landscape	
	59 | *6*	167 | *17*	at 32 L/h
	461 | *47*	961 | *98*	at 100 L/h
Hydraulic input/output	DualQuickfit® fittings		
	Non-Insulated	Insulated	
Maximum temperature	70 °C	80 °C	
Optical efficiency a_0	55,9 % *	47,2 % *	
Heat loss coefficient a_1	15,8 W/K/m² *	9,1 W/K/m² *	
Heat loss coefficient a_2	0 W/(m²,K²) *		

* The a_0, a_1 et a_2 coefficients are the measured values from testing during EN 12975 certification at the TÜV Rheinland for unglazed collectors with a windspeed u = 1m/s : $a_0 = n_0 - c_6{*}u$; $a_1 = c_1 + c_3{*}u$.

Power output as a function of the temperature of the water in the panel
(by application)



Power values are calculated using the a0, a1 coefficients and the panel surface (1.635m²) in STC conditions (Text = 25°C, G = 1000 W/m²).