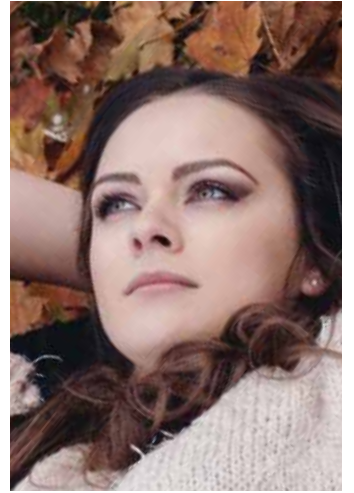


# STRATOS<sup>®</sup>4s

S Y S T E M



# THE MOST EFFICIENT COMPACT SOLAR THERMAL SYSTEM



The system **STRATOS® 4S Rotoshield®** is an innovative compact high-efficiency solar thermal system with integrated DHW storage. It is equipped with a patented self-balancing and anti-stagnation system. The Rotoshield patent protects the system and maximizes the performances.

It is indicated for the production of domestic hot water in all climatic zones thanks to its ability to retain the captured heat. The system can in fact be installed in areas with temperatures up to -20 °C.

## PATENTED SELF-BALANCING AND ANTI-STAGNATION SYSTEM

**ROTOSHIELD®**  
S Y S T E M



## FRAME OF ANODIZED MARINE GRADE ALUMINIUM

## DOMESTIC HOT WATER IN ANY ZONE AND SEASON

## SUITABLE UP TO -20 °C

## RETAINS THE HEAT THANKS TO THE VAACUM TECHNOLOGY

## DHW ACCUMULATION IN STAINLESS STEEL AISI 316L

## NATURAL CIRCULATION FUNCTIONING WHICH DOES NOT REQUIRE ELECTRICITY



LESS SPACE



MINOR INSTALLATION COSTS



GREATER PERFORMANCES



SHORTER INSTALLATION TIME



MORE ENERGY SAVING

SAVING



# SOLAR THERMAL SYSTEM STRATOS® 4S

COMPACT AND HIGH-EFFICIENCY SOLAR THERMAL SYSTEM

NEW

ROTO  
SHIELD®  
SYSTEM



Percorso  
Efficienza  Innovazione

## APPLICATION

The system STRATOS® 4S Rotoshield® is an innovative compact high-efficiency solar thermal system with integrated DHW storage. It is equipped with a patented self-balancing and anti-stagnation system. The Rotoshield® patent protects the system and maximizes the performances. It is indicated for the production of domestic hot water in all climatic zones thanks to its ability to retain the captured heat. The system can in fact be installed in areas with temperatures up to -20 °C.

## STRUCTURE AND MATERIALS

Frame structure in marine grade anodized aluminum. Support and fixing brackets in galvanized steel. Capturing system composed of tubes with vacuum technology of Sydney type with high selective coating and high grade of vacuum. Primary circuit realized in stainless steel AISI 304. DHW

exchanger in stainless steel AISI 316L suitable for drinking water (DM nr.174 del 06/04/2004).

## ACCESSORIES INCLUDED

6 bar safety valve.  
Fixing kit for flat (angle of 30°) and pitched roof.

## CONNECTIONS

2 connections 1/2" gas F.

## WARRANTY

5 years - Refer to general sales conditions of our solar thermal systems catalogue in force.

| MAX<br>PRESSURE<br>INLET | MAX<br>PRESSURE<br>ACCUMULATION | MAX<br>TEMPERATURE | MIN.<br>TEMPERATURE | PITCH<br>INCLINATION |
|--------------------------|---------------------------------|--------------------|---------------------|----------------------|
| 4 bar                    | 7,5 bar                         | 100°C              | -20°C               | 10° - 70°            |



## STRATOS® 4S WITH ROTOSHIELD® SYSTEM

| MODEL | Art. Nr.      |
|-------|---------------|
| 120   | 3410316603203 |
| 180   | 3410316603204 |

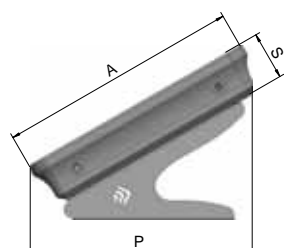
## ACCESSORIES INCLUDED

|   |   |
|---|---|
| Aluminum profile anodizing marine grade treatment | ✓ |
| 6 bar safety valve                                | ✓ |
| Fixing kit for flat and pitched roof              | ✓ |
| Primary fluid                                     | ✓ |

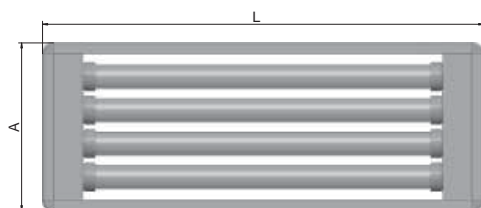
# SOLAR THERMAL SYSTEM STRATOS® 4S

COMPACT AND HIGH-EFFICIENCY SOLAR THERMAL SYSTEM

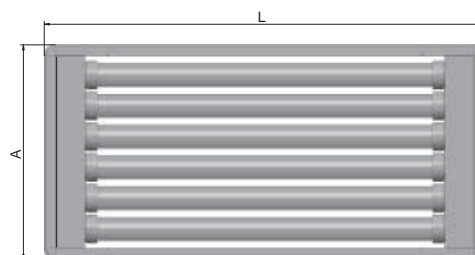
**ROTO**  
**SHIELD®**  
SYSTEM



MODEL 120



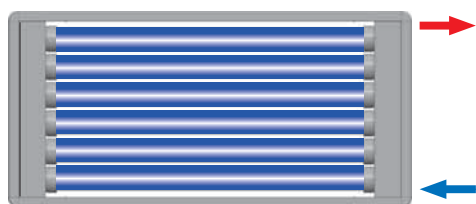
MODEL 180



## SISTEMA STRATOS® 4S WITH ROTOSHIELD® SYSTEM

| MODEL      | L    | P   | H   | A    | S   | DHW CONNECTIONS | GROSS SURFACE AREA | TOTAL WEIGHT IN FUNCTION | WEIGHT PER m <sup>2</sup> IN FUNCTION |
|------------|------|-----|-----|------|-----|-----------------|--------------------|--------------------------|---------------------------------------|
|            | [mm] |     |     |      |     | 1-2             | [m <sup>2</sup> ]  | [kg]                     | [kg]                                  |
| <b>120</b> | 2160 | 752 | 589 | 822  | 163 | 1/2" F          | 1,77               | 122                      | 69                                    |
| <b>180</b> | 2160 | 951 | 704 | 1052 | 163 | 1/2" F          | 2,27               | 178                      | 78                                    |

### TYPICAL INSTALLATION SCHEME



### ALSO SUITABLE FOR PITCHED ROOF



### THE LIGHTEST SYSTEM

STRATOS® 4S is the lightest compact solar thermal system on the market. In order of performance, thanks to the reduced weight ratio per square meter, the STRATOS 4S system results to be the lightest and less burdensome for roofs and roofing's.

### UTILITIES



MODEL 120



MODEL 180



**ROTO**  
**SHIELD®**  
SYSTEM

The patented **ROTOSHIELD® SYSTEM** has been expressly studied to avoid overheating of the system during the periods of major insolation and in absence of DHW levy. The rotation takes place in a natural way without the use of any electric device.



**CORDIVARI®**

STRATOS®

SYSTEMS WITH FLAT  
COLLECTORS

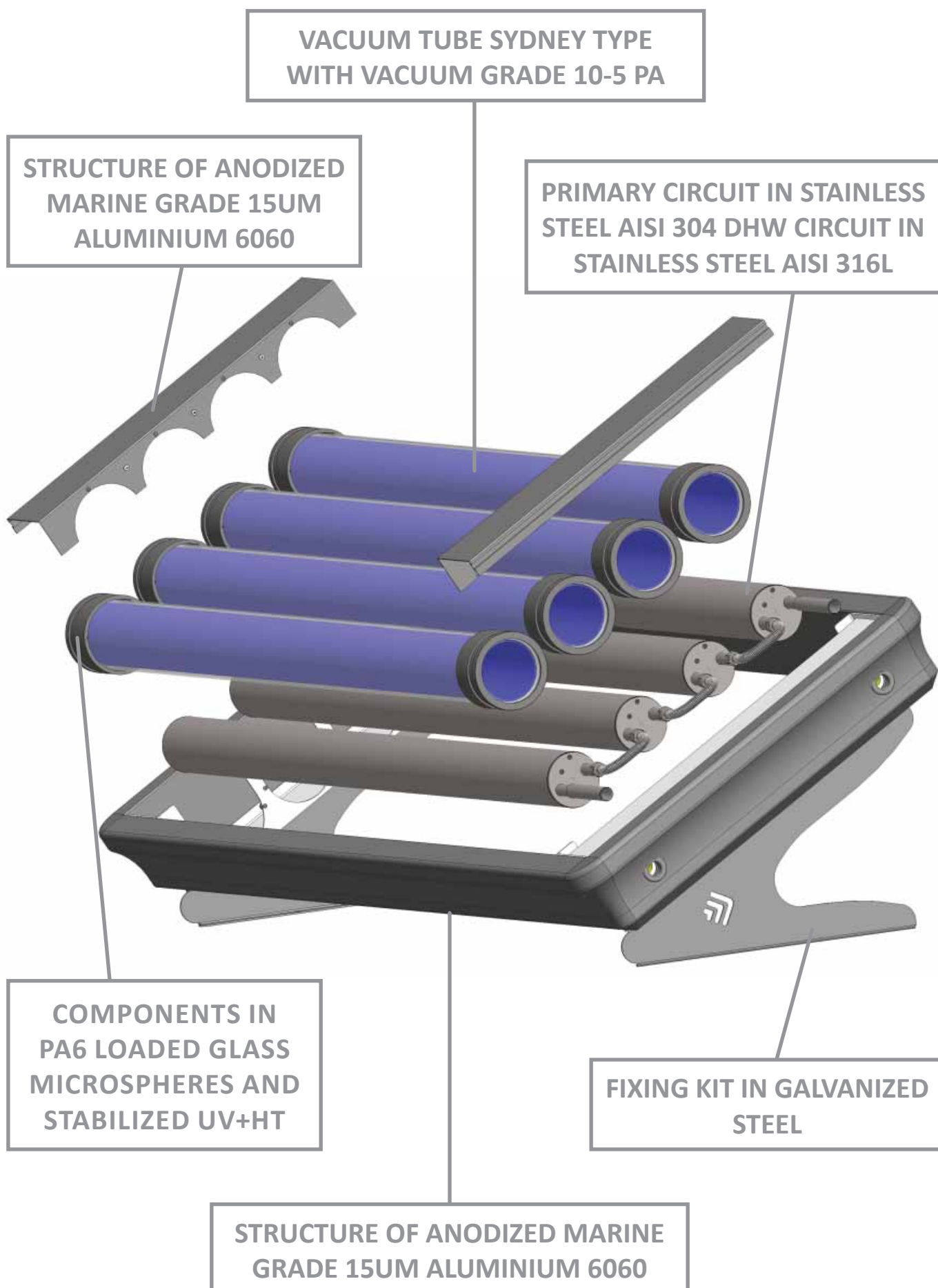
SYSTEMS WITH SOLAR  
VACUUM TUBE COLLECTOR

COLLECTORS AND  
ACCESSORIES

TECHNICAL SUPPORT

# STRATOS® 4S - TECHNICAL INSIGHTS

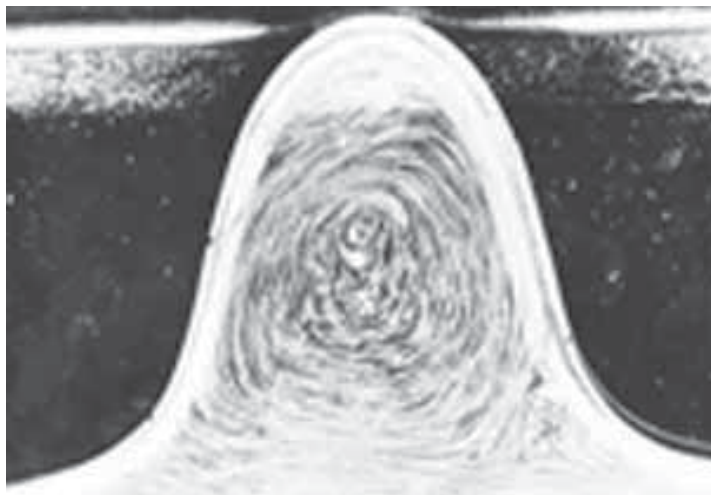
## HOW IT'S MADE





# STRATOS® 4S - TECHNICAL INSIGHTS

## OPTIMAL HEAT EXCHANGE WITHOUT LIMESTONE DEPOSITS



In the corrugated heat exchanger, turbulences are formed which continuously move and exchange the water. On the base current flow a torsion component created by the constructive form itself is superimposed, thus producing further vortices. Therefore the maximum heat exchange is obtained avoiding the deposit of limestone.

## TARGETED TURBULENCES AGAINST THE FORMATION OF DEPOSITS

The corrugated profile generates focused turbulences which uniformly mixes the circulating liquid.

In this way the formation of limestone deposits is avoided, guaranteeing constant performances for the entire life cycle. The corrugated form prevents calcification of the drinking water exchanger

The heat exchanger expands slightly when heating and cooling, so that the limestone deposits are largely avoided. During the levy the corrugated shape of the tube favors the formation of turbulences in the exchanger. These turbulences allow a rinsing of the limestone molecules with the hot water. The hot water is heated when needed in a fast, safe and clean way. In this way the hot water is always available fresh and excellent from a hygienic point of view without the need for a hot water tank.

## OPERATING TESTS IN EXTREME CONDITIONS

- Operation stress test of the Rotoshield mechanism carried out under extreme temperature conditions detect the perfect functioning at temperatures above -20 °C for several consecutive days
- Freezing test of the heat-carrying fluid up to -30 °C

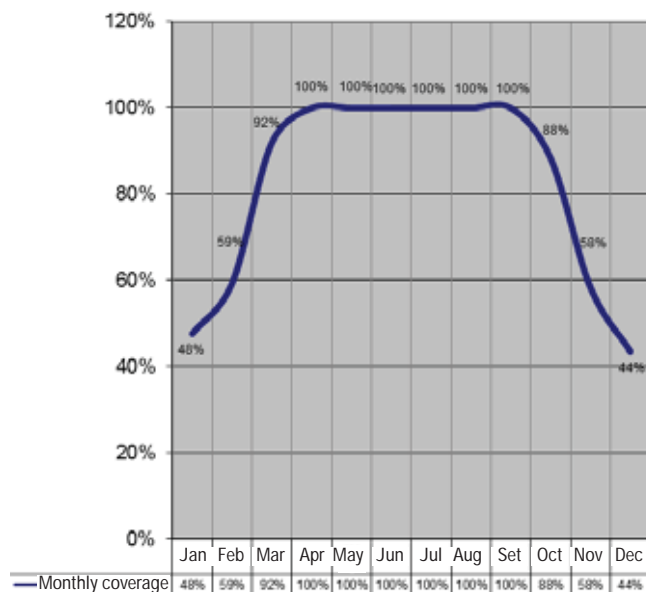


# STRATOS® 4S - TECHNICAL INSIGHTS

## USABILITY CURVE\*

### STRATOS® 4S SYSTEM

Percentage coverage of energy requirements



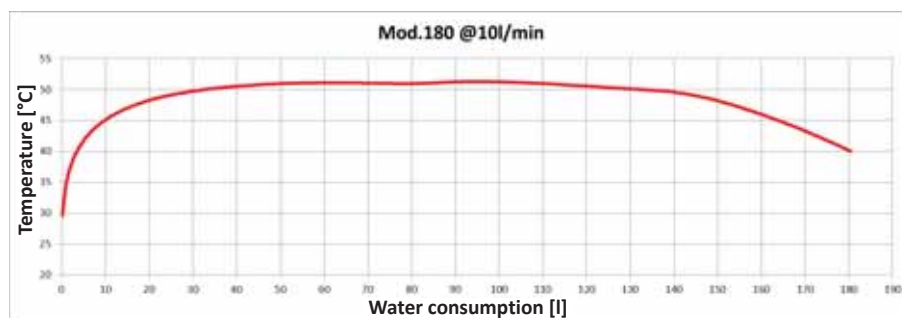
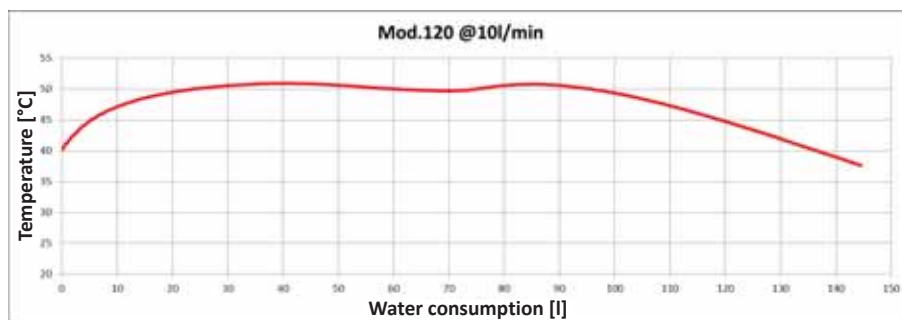
- ANNUAL DHW NEEDS COVERAGE EXCEEDING 80%

- HOT WATER EVEN IN THE MIDDLE SEASONS

\*150 lt requirement of DHW collector orientation south.

## EFFICIENCY TEST

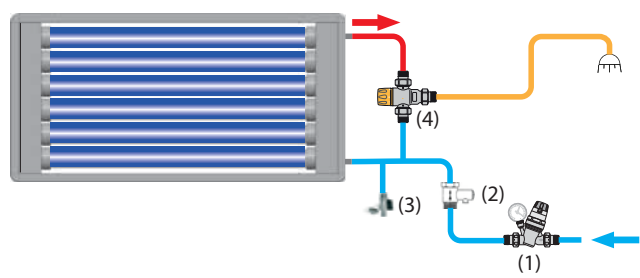
In collaboration with the Industrial engineering department and mathematical sciences – DIISM of the Polytechnic University of Marche



SINGLE LEVY TEST OF DHW AT 45 °C, WHICH CAN BE CARRIED OUT WITH PRIMARY STORAGE AT 85 °C AND DOMESTIC HOT WATER FLOW OF 10LT/MIN

# STRATOS® 4S - TECHNICAL INSIGHTS

## TYPICAL INSTALLATION SCHEME



### CONNECTIONS LEGEND

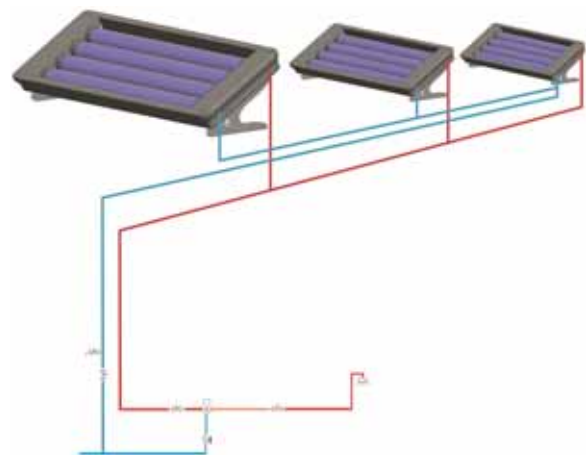
- |   |  |
|---|--|
| 1 | Eventual pressure reducer                                      |
| 2 | Safety and non-return valve (included)                         |
| 3 | Drain tap for panel draining (to be provided by the installer) |
| 4 | Thermostatic mixing valve (optional-to be ordered separately)  |

## MAXIMUM INSTALLATION FLEXIBILITY

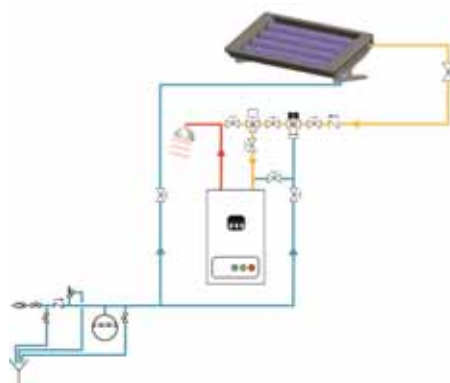
### SINGLE INSTALLATION (STAND-ALONE)



### INSTALLATION IN PARALLEL



### BOILER INTEGRATION



### INSTALLATION IN PARALLEL WITH PRE-HEATING CYLINDER FUNCTION

