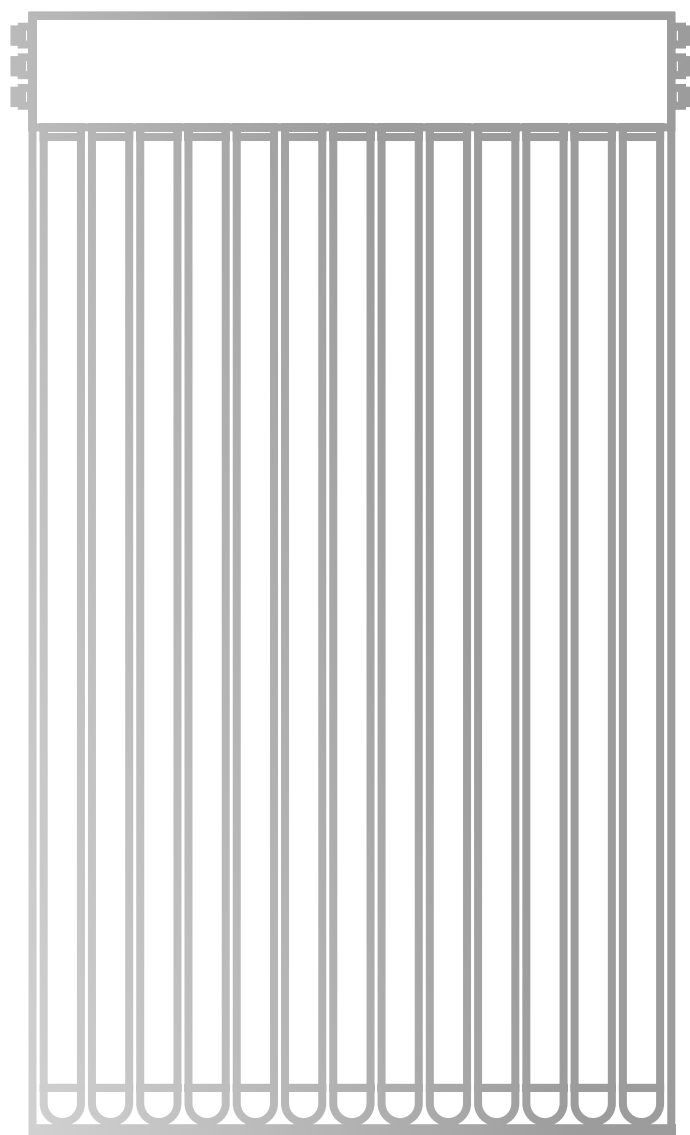


DESIGNED AND PRODUCED IN ITALY

PLEION

The Solar that warms your LIFE!



SOLAR THERMAL PROFESSIONAL

2023

Ver. 02

www.pleion.it

Solar thermal specialists

PLEION is proud to offer the most innovative products on the market. These are completely innovative and revolutionary solar systems that change the rules of the game and are the result of our unique expertise.

Pleion provides complete solutions, from A to Z.

- Solar collectors that perform extremely well in both summer and winter.
- MADE IN ITALY - High quality standards
- Built-in hydraulics circuits, sophisticated appearance, and technical functionality all-in-one.
- Technical support and a qualified management team

Pleion produces and manages innovative systems and solutions, even custom-made, for the industrial and residential.

RESEARCH AND DEVELOPMENT



SOLAR COLLECTORS



SPECIALISED PRODUCTION



QUALITY TESTING



LOGISTICS



TECHNICAL SUPPORT



Acqua calda
Gratis dal Sole!
PLEION
Il n.1 del Solare Termico in Italia!
www.pleion.it

Technology meets the future.

With its exceptional experience behind it, Pleion is a reference point in the Italian solar thermal market.

- Strong industry expertise: complete and exclusive solutions from a single partner.
- Technical TEAM dedicated to the customer.
- Flexibility in design and technology
- Exceptional experience as a market leader in solar thermal.
- Total quality, an expanding portfolio of customers who believe in Pleion's quality and service.



A man with dark hair, a beard, and black-rimmed glasses is smiling at the camera. He is wearing a blue, red, and white plaid button-down shirt. He is sitting at a wooden desk with his chin resting on his hand. In front of him is a silver laptop, a white coffee cup on a saucer, and a silver container holding several colored pencils. The background is a bright, out-of-focus indoor space.

SOLAR THERMAL PROFESSIONAL

A horizontal graphic of the Italian flag, consisting of three equal-width bands of green, white, and red.

DESIGNED AND PRODUCED IN ITALY

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ECLIPSE SYSTEM

THE FIRST INTELLIGENT
ANTI-STAGNATION **SYSTEM**

**NEW
WORLD
LAUNCH**

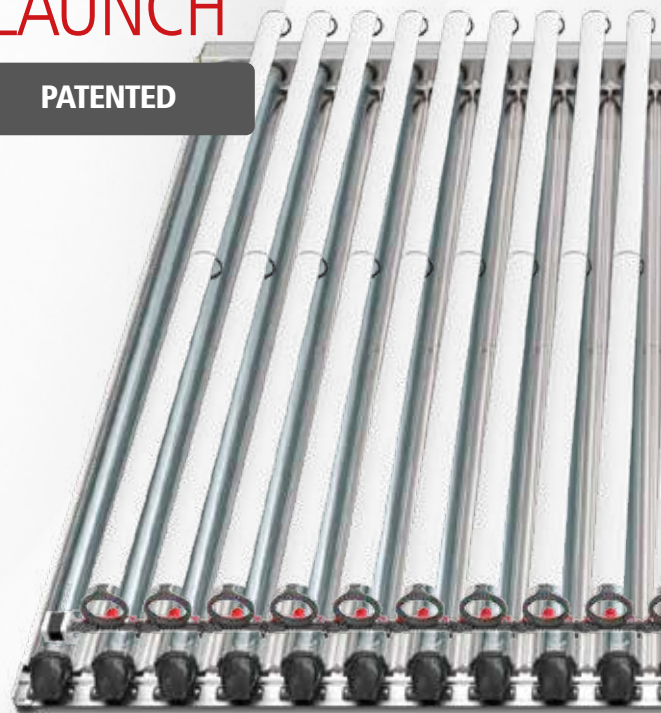
PATENTED

**New generation,
new revolution!**

The patented shading **ECLIPSE SYSTEM** operates **AUTOMATICALLY** in the event of over-temperature of the panel, cooling it instantaneously.

The new **X-RAY-R WITH ECLIPSE SYSTEM** solar panels are protected by a **SYSTEM OF ROTATING PARABOLIC REFLECTORS**.

When it reaches 85°C, the **X-RAY-R WITH ECLIPSE SYSTEM** automatically closes its integrated parabolic system, blocking the solar radiation.



The heart of the **ECLIPSE SYSTEM** is a solar collector with evacuated tubes **PLEION X-RAY-R** was certified by the most stringent European laboratories.



**PARABOLIC
REFLECTORS
OPEN**



**CLOSE
IN 10 SECONDS**



**PARABOLIC
REFLECTORS CLOSED**



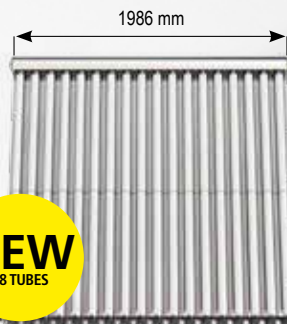
NEW
10 TUBES

**X-RAY 10R
+ ECLIPSE SYSTEM**
Up to 8 collectors
in parallel



NEW
15 TUBES

**X-RAY 15R
+ ECLIPSE SYSTEM**
Up to 5 collectors
in parallel



NEW
18 TUBES

**X-RAY 18R
+ ECLIPSE SYSTEM**
Up to 4 collectors
in parallel

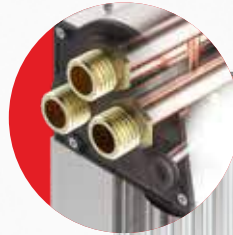


NEW
21 TUBES

**X-RAY 21R
+ ECLIPSE SYSTEM**
Up to 3 collectors
in parallel

PLEION

The Solar that warms your LIFE!



EFFICIENCY
+15%
IN PARALLEL

HIGH POWER SUPER EFFICIENCY **+15% IN PARALLEL**

High-efficiency collectors of the highest category, with evacuated tube technology and third tube built into the head (no visible return tubing).



SYSTEM EFFICIENT **365 DAYS A YEAR**

The solar system is used 365 days a year, with the ECLIPSE SYSTEM protected in the event of excessive radiation (without the need for evacuation).

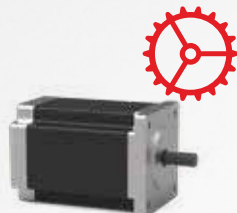
The ECLIPSE SYSTEM drastically reduces stagnation. In any case, it is recommended to correctly size the number of panels in relation to the consumption and volume of the boiler/accumulator.



Fraunhofer
ISE



NEW
DIRT REPELLENT
SELF-CLEANING HEAD



NEW
LOW-CONSUMPTION MOTOR



ECLIPSE SYSTEM SMART CONTROL

- Automatic SMART Control
- Manual Closure
- Programming

X-RAY R

EVACUATED SOLAR COLLECTORS WITH THIRD TUBE BUILT IN

Maximum efficiency:
even in winter,
365/year!

**Third tube built in. Greater efficiency (+15%)*
and harmonious architectural integration.**

PLEION's new line of X-RAY-R evacuated solar collectors:

The PLEION X-RAY-R collectors are ideal for DHW heating and integration of the heating system for rooms. The X-RAY-R modules are modular and easy-to-install modules, in 4 different sizes of 10, 15, 18, and 21 tubes.

They require very little maintenance and, if necessary, the single tube can be replaced very easily.

THEY CAPTURE SOLAR RAYS AT 360°!

The cylindrical tubes, along with the CPC reflector, capture the solar rays from various angles (even those that are usually lost with flat collectors) and allow high yields, even during the afternoon hours and with unfavourable exposure.

PLEION INNOVATION
3RD TUBE BUILT IN

X-RAY 15R

EFFICIENCY
CPC
COLLECTING



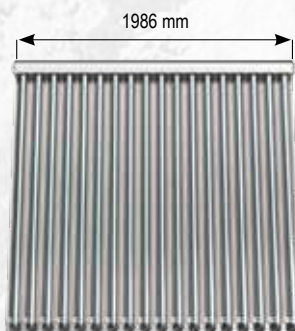
X-RAY 10R

Up to 8 collectors
in parallel



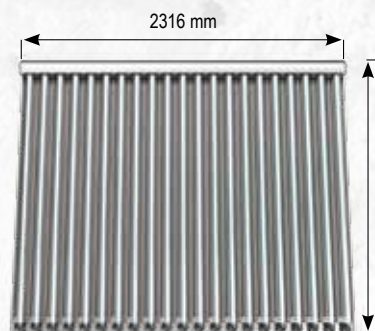
X-RAY 15R

Up to 5 collectors
in parallel



X-RAY 18R

Up to 4 collectors
in parallel



X-RAY 21R

Up to 3 collectors
in parallel

+15%
EFFICIENCY*



SAPIENZA
UNIVERSITÀ DI ROMA

*+15% efficiency connected in parallel. TEST CARRIED OUT AT THE CIRPS INTER-UNIVERSITY RESEARCH CENTRE FOR SUSTAINABLE DEVELOPMENT.

X-RAY 18R

X-RAY 10R

X-RAY 18R

WARRANTY
PIPES

YEARS

10

HAIL PROTECTION

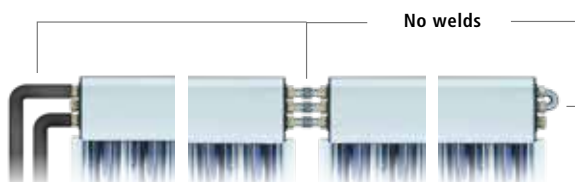
X-RAY R

EVACUATED SOLAR COLLECTORS WITH THIRD TUBE BUILT IN

Maximum efficiency, even in winter!

Third tube built in. More efficiency (+15%)
and harmonious architectural integration.

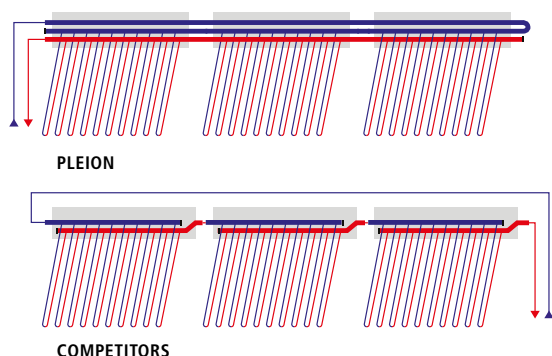
PLEION's new line of X-RAY-Rdi evacuated solar collectors:



SAPIENZA
UNIVERSITÀ DI ROMA

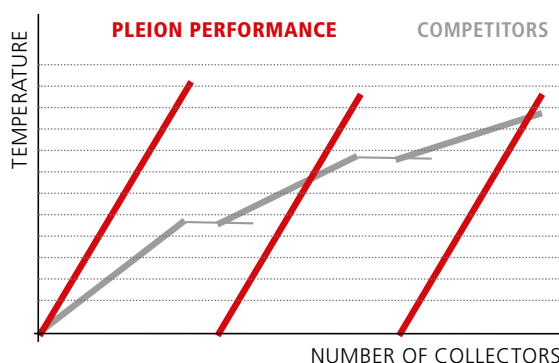
*+15% efficiency connected in parallel. TEST CARRIED OUT AT THE CIRPS INTER-UNIVERSITY RESEARCH CENTRE FOR SUSTAINABLE DEVELOPMENT.

15% HIGHER PERFORMANCE IN PARALLEL COMPARED TO COMPETITORS



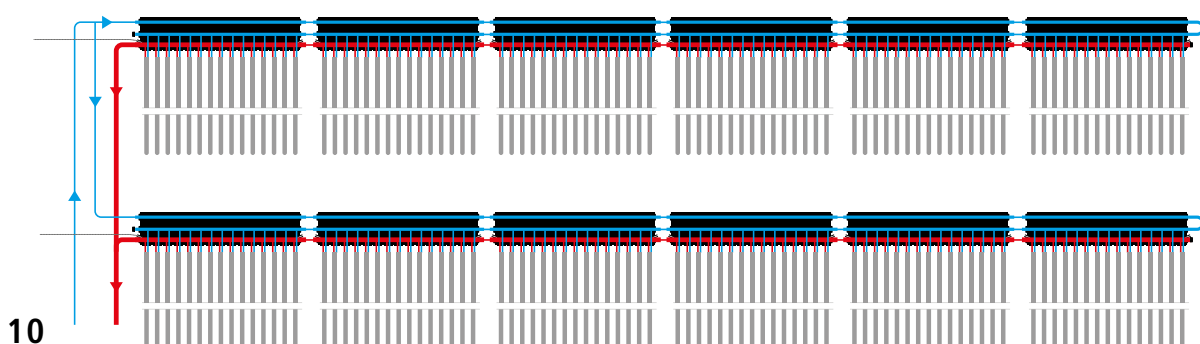
PLEION INNOVATION 3RD TUBE BUILT IN - All X-RAY R 10/15/18/21 evacuated collectors with and without ECLIPSE SYSTEM are equipped with the hydraulics built into the collector:

- **No external conduction** - the water is not exposed to the outside, ensuring the best possible insulation with less heat loss and no deterioration over time.
- **PLUG&PLAY collectors** - This technology drastically reduces the mounting time on the roof and ensures a more clean and harmonious look.
- **HIGH PERFORMANCE** - Heating is done quickly, efficiently and uniformly, especially in winter, compared to all competitors with 2-tube hydraulics.



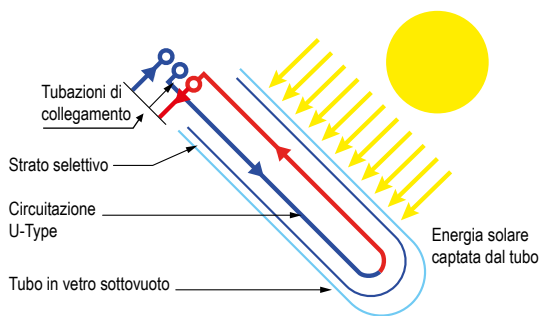
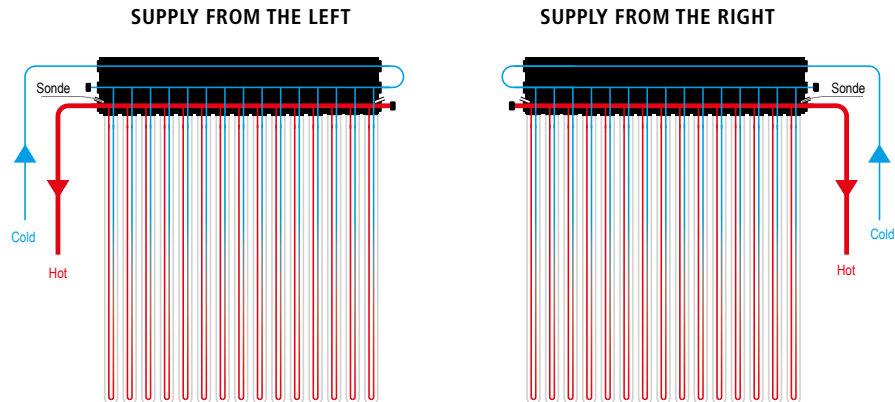
WATER CONNECTIONS POSSIBLE WITH PLEION EVACUATED COLLECTORS

Depending on the collector model, strings of 6 to 12 collectors can be created, reducing the installation costs of the system due to the lack of material such as external connection pipes, various valves, and personnel costs.



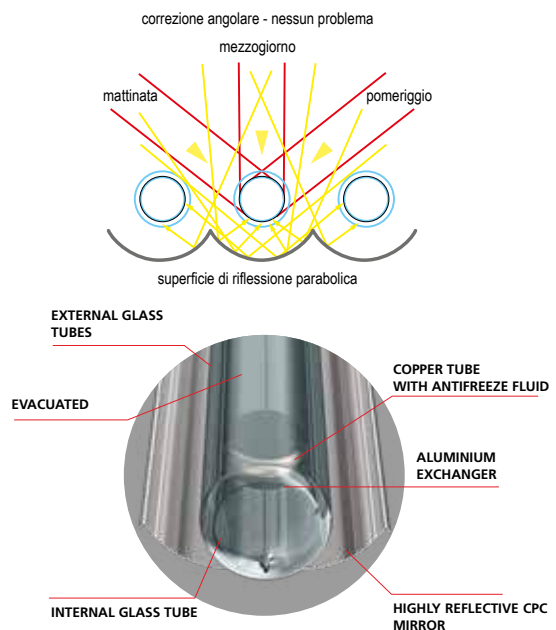
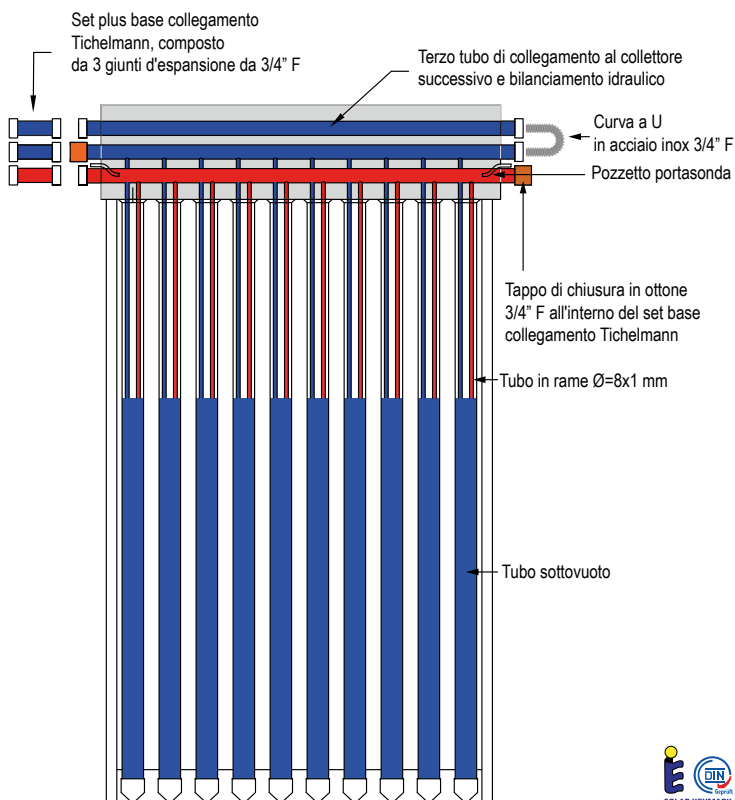
REVERSIBLE WATER CONNECTIONS

Pleion evacuated collectors have water connections on both side to make connected with external tubing reversible.



PLEION INNOVATION The collector is made up of five primary pre-assembled components: **CPC parabolic reflector**, **evacuated tubes**, **absorber**, **water circuit including outlet and return tubing** and **third tube for inverse water balancing**.

Thanks to its particular shape, the highly reflective CPC (Compound Parabolic Concentrator) parabolic reflector is able to increase the energy absorbed by the collector, by being able to reflect diffuse and direct sunlight during any part of the day, performing the function of correcting the angles of the sun's rays (morning - afternoon).



EVACUATED SOLAR COLLECTORS

X-RAY 10 R

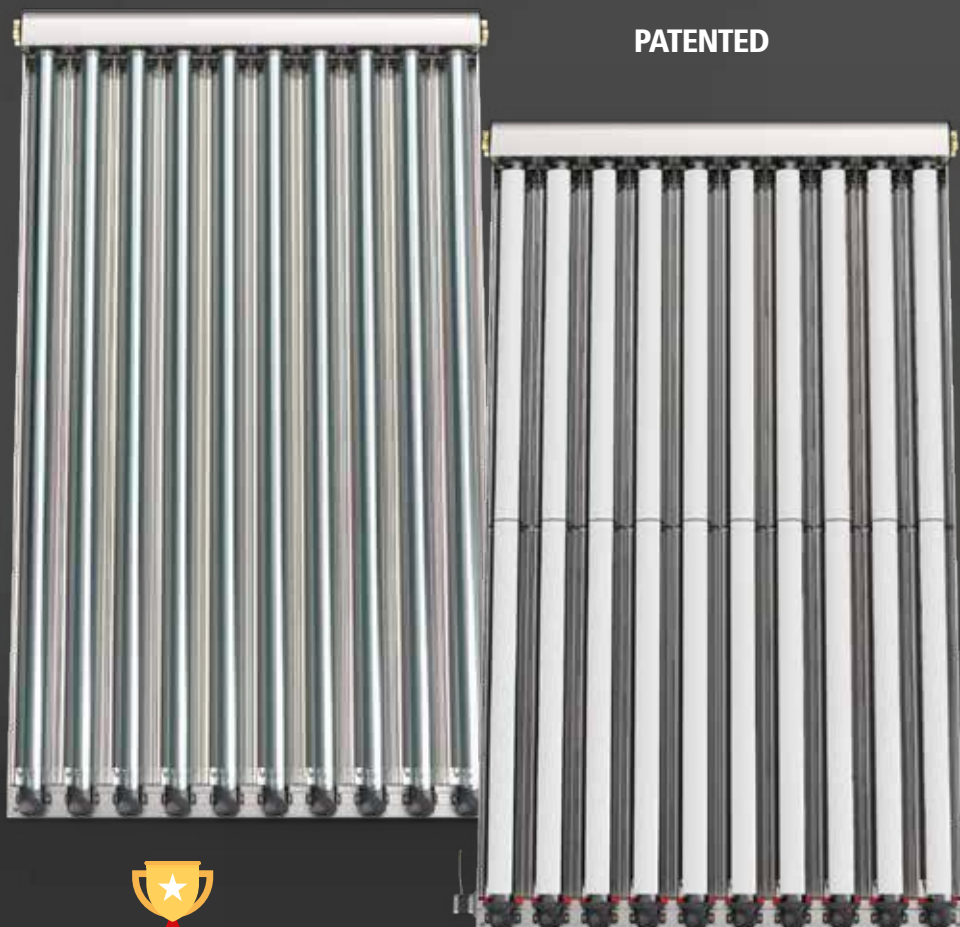
X-RAY 10 R + ECLIPSE SYSTEM



100% MADE IN PLEION

NEW
WORLD
LAUNCH

PATENTED

EXTREMELY
HIGH PERFORMANCE621 kWh/m² year
50° Würzburg dataECLIPSE
SYSTEM

*EXTENDED WARRANTY



HAIL PROTECTION

ACTIVATE THE
WARRANTY
ONLINE!

EVACUATED SOLAR COLLECTORS **X-RAY 10 R**

The super efficient collector even with an **ANTI-STAGNATION** system **ECLIPSE SYSTEM**

The X-RAY 10 R high performance evacuated tube collector is comprised of 10 tubes with an external diameter of 58 mm made of 3.3 borosilicate glass with a double cavity, inside of which a vacuum is created to eliminate heat loss to the outside environment.

The internal hydraulic circuit is made of \varnothing 18x0.7 mm copper connecting pipes with $\frac{3}{4}$ " M welded couplings in each glass tube by an equal number of \varnothing 8x0.6 mm U-bent copper outlet and return pipes in which the solar heat transfer fluid flows for heating.

The entire external structure of the collector is made of anodised aluminium while the side closures on the collector are made of thermoplastic with slots to allow natural air circulation inside the collector head and eliminate internal condensation that could form during the winter, thus protecting the insulation from deterioration.

Reversible collector with water coupling and temperature probe ready on both sides.

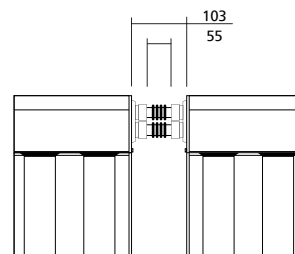
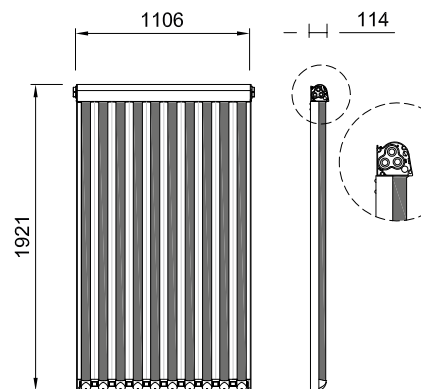
PARALLEL CONNECTION**WITH THE ADDITION OF AN INTEGRATED THIRD TUBE**

Thanks to the third tube and the third coupling with the X-RAY 10 R collector, 8 collectors can be connected in parallel in a single string, creating a single collector in terms of energy.

With the hydraulic connection systems, creating the connection between each panel is extremely easy, quick and efficient, with "no welding or special tools" required. The connections also function as expansion joints besides ensuring an excellent view of the system due to the lack of piping on the roof.

X-RAY 10 R with ECLIPSE SYSTEM ANTI-STAGNATION

- **AUTOMATIC ANTI-STAGNATION SYSTEM** that protects the collector from overtemperature.
- **SMART APP CONTROL**

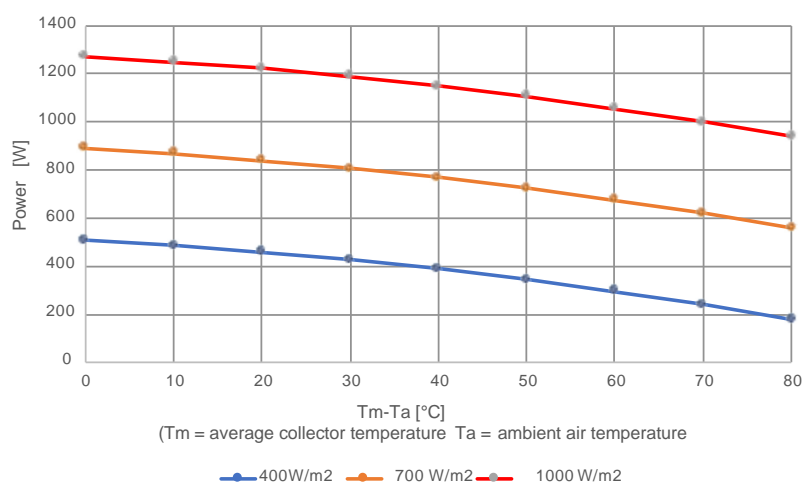
EVACUATED SOLAR COLLECTORS
X-RAY 10 R - AREA 2.12 m²

X-RAY 10 R

TECHNICAL FEATURES

TECHNICAL FEATURES		
Evacuated tubes	[No.]	10
Maximum number of batter collectors recommended	[No.]	8
Attachments	[No.]	6
Couplings dimensions	[Ø inch]	¾" M
Aperture surface	[m²]	1.912
Absorption surface	[m²]	2.574
Gross surface area	[m²]	2.12
Dimensions (LxHxD)	[mm]	1,106x1921x114
Head insulation thickness, aluminised glass wool insulation.	[mm]	47
Evacuated tubes Diameter-Length	[mm]	58/47 - 1800
Recommended inclination angle	[°]	15-75 °
Weight	[kg]	41.5
Heat transfer fluid content	[litres]	2.48
PERFORMANCE		
η_0 Optical efficiency (ref. gross surface area)	[%]	0.600
k1 transmission coefficient (ref. gross surface area)	[W/m²K]	0.910
K2 transmission coefficient (ref. gross surface area)	[W/m²K²]	0.013
Nominal power	[W]	1272
Angle-of-incidence correction factor	[K50°]	1.14 T/0,91L
Thermal capacity (ref. aperture)	[kJ/m²K]	50.9
Energy produced annually ISO 9806:2013 – Wurzburg – Temperature 50°C	[kWh]	1231
Energy produced annually ISO 9806:2013 – Wurzburg – Temperature 75°C	[kWh]	944
Test Report ISO 9806: 2013	-	Kiwa
CERTCO DIN Registration number	-	16084 REV.0
Recommended capacity per collector	[l/h]	85
Stagnation temperature	[°C]	279
Maximum pressure	[bar]	10

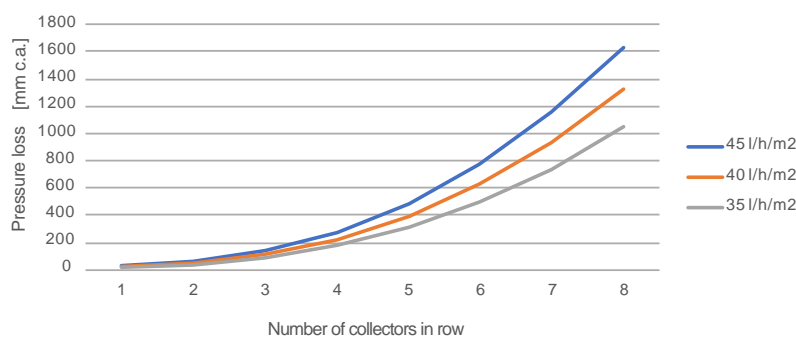
POWER CURVES X-RAY 10R



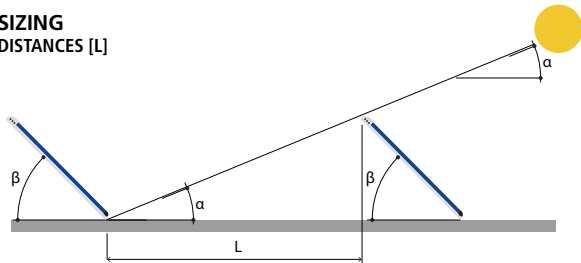
POWER [W]	SOLAR RADIATION [W/m²]		
Tm-Ta [°C]	400	700	1000
0	509	890	1272
10	487	868	1250
20	459	841	1222
30	426	808	1189
40	388	769	1151
50	343	725	1107
60	294	675	1057
70	239	620	1002
80	178	560	941

LOSS OF LOAD X-RAY 10R COLLECTORS WITH THIRD TUBE, PROPYLENE GLYCOL 50% [mm WC]				
No. collectors	Gross surface area [m ²]	ΔP [mm wc] with 45 l/h/m ²	ΔP [mm wc] with 40 l/h/m ²	ΔP [mm wc] with 35 l/h/m ²
1	2.20	32	26	20
2	4.40	65	53	42
3	6.61	143	116	92
4	8.81	278	227	179
5	11.01	485	395	312
6	13.21	775	628	496
7	15.41	1153	938	734
8	17.62	1629	1325	1050

including 3rd tube, propylene glycole 50%



SIZING DISTANCES [L]



Solar rays inclination angle α[°]	Solar collector inclination angle β [°]		
	35 °	45 °	50 °
15	4.1	5.1	5.5
25	2.3	2.8	3
35	1.5	2	2.2

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu Øe/Øi [mm]
1	90	16/14
2	180	16/14
3	270	18/16
4	360	22/20
5	450	22/20
6	540	22/20
7	630	28/25
8	720	28/25

SIZE AND DIMENSIONS *

Number of collectors	Width with MOUNTING BRACKETS [mm]
1	1206
2	2412
3	3618
4	4824
5	6030
6	7236
7	8442
8	9648

* The values refer to the Pleion mounting brackets

COD	DESCRIPTION
1010101063	X-RAY 10 R evacuated solar collector
1010101064	X-RAY 10 R evacuated solar collector WITH ECLIPSE SYSTEM
1030906982	SMART CONTROLLER ECLIPSE SYSTEM*

* One every 2 collectors

EVACUATED SOLAR COLLECTORS

X-RAY 15 R

X-RAY 15 R + ECLIPSE SYSTEM



100% MADE IN PLEION

NEW
WORLD
LAUNCH

PATENTED

EXTREMELY
HIGH PERFORMANCE621 kWh/m² year
50° Würzburg dataECLIPSE
SYSTEM

*EXTENDED WARRANTY



HAIL PROTECTION

ACTIVATE THE
WARRANTY
ONLINE!

X15 -RAY R EVACUATED SOLAR COLLECTORS

The super efficient collector even with an ANTI-STAGNATION system ECLIPSE SYSTEM

The X-RAY 15 R high performance evacuated tube collector is comprised of 15 tubes with an external diameter of 58 mm made of 3.3 borosilicate glass with a double cavity, inside of which a vacuum is created to eliminate heat loss to the outside environment.

The internal hydraulic circuit is made of $\varnothing 18 \times 0.7$ mm copper connecting pipes with $\frac{3}{4}$ " M welded couplings in each glass tube by an equal number of $\varnothing 8 \times 0.6$ mm U-bent copper outlet and return pipes in which the solar heat transfer fluid flows for heating.

The entire external structure of the collector is made of anodised aluminium while the side closures on the collector are made of thermoplastic with slots to allow natural air circulation inside the collector head and eliminate internal condensation that could form during the winter, thus protecting the insulation from deterioration.
Reversible collector with water coupling and temperature probe ready on both sides.

PARALLEL CONNECTION

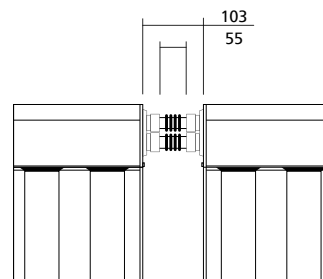
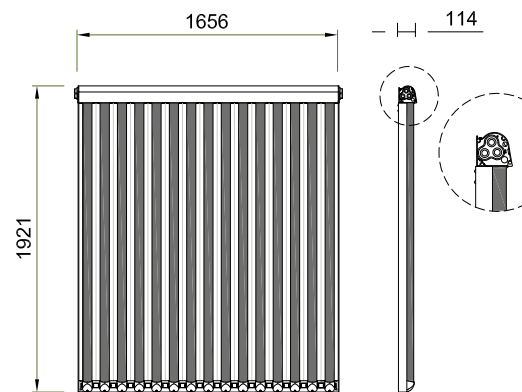
WITH THE ADDITION OF AN INTEGRATED THIRD TUBE

Thanks to the third tube and the third coupling with the X-RAY 10 R collector, 6 collectors can be connected in parallel in a single string, creating a single collector in terms of energy.

With the hydraulic connection systems, creating the connection between each panel is extremely easy, quick and efficient, with "no welding or special tools" required. The connections also function as expansion joints besides ensuring an excellent view of the system due to the lack of piping on the roof.

X-RAY 15 R with ECLIPSE SYSTEM ANTI-STAGNATION

- AUTOMATIC ANTI-STAGNATION SYSTEM that protects the collector from overtemperature.
- SMART APP CONTROL



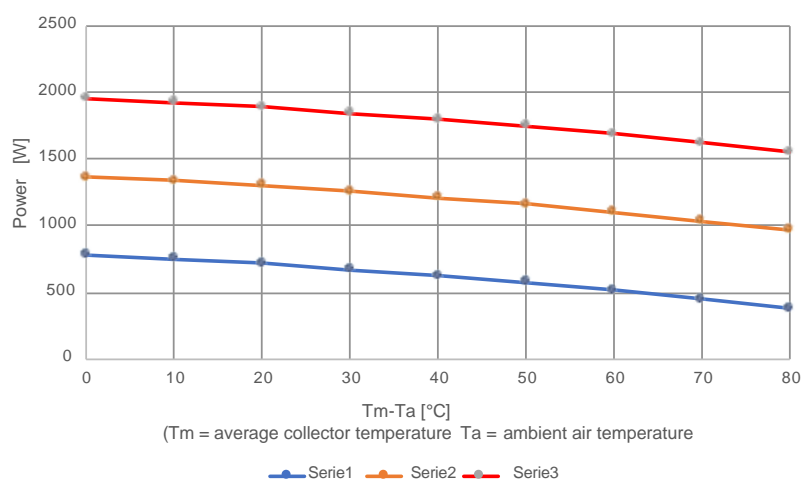
EVACUATED SOLAR COLLECTORS
X-RAY 15R - AREA 3.18 m²

X-RAY 15 R

TECHNICAL FEATURES

TECHNICAL FEATURES		
Evacuated tubes	[No.]	15
Maximum number of batter collectors recommended	[No.]	5
Attachments	[No.]	6
Couplings dimensions	[Ø inch]	¾" M
Aperture surface	[m²]	2.866
Absorption surface	[m²]	3.852
Gross surface area	[m²]	3.18
Dimensions (LxHxD)	[mm]	1656x1921x114
Head insulation thickness, aluminised glass wool insulation.	[mm]	47
Evacuated tubes Diameter-Length	[mm]	58/47 - 1800
Recommended inclination angle	[°]	15-75 °
Weight	[kg]	72
Heat transfer fluid content	[litres]	3.28
PERFORMANCE		
η_0 Optical efficiency (ref. gross surface area)	-	0.615
k1 transmission coefficient (ref. gross surface area)	[W/m²K]	0.850
K2 transmission coefficient (ref. gross surface area)	[W/m²K²]	0.009
Nominal power	[W]	1956
Angle-of-incidence correction factor	[K50°]	1,14T/0,91L
Thermal capacity (ref. aperture)	[kJ/m²K]	50.9
Energy produced annually ISO 9806:2013 – Würzburg – Temperature 50°C	[kWh]	2371
Energy produced annually ISO 9806:2013 – Würzburg – Temperature 75°C	[kWh]	1929
Test Report ISO 9806:2013	-	Kiwa
CERTCO DIN Registration number	-	16083 REV 0
Recommended capacity per collector	[l/h]	127
Stagnation temperature	[°C]	279
Maximum pressure	[bar]	10

POWER CURVES X-RAY 15R

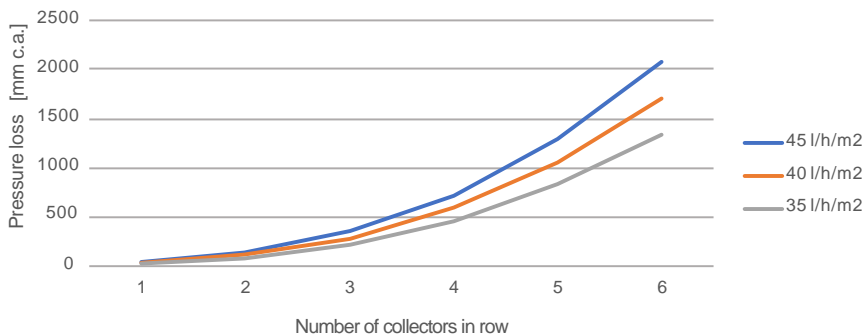


POWER [W]	SOLAR RADIATION [W/m²]		
Tm-Ta [°C]	400	700	1000
0	782	1369	1956
10	752	1339	1926
20	717	1303	1890
30	675	1262	1849
40	628	1215	1802
50	576	1162	1749
60	517	1104	1690
70	453	1040	1626
80	383	970	1556

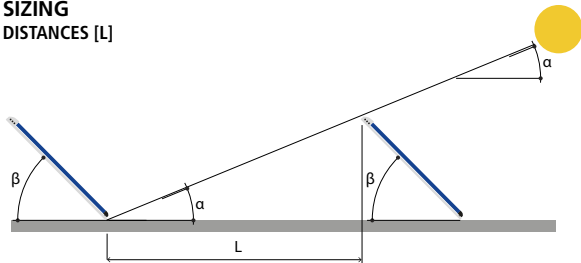
LOSS OF LOAD X-RAY 15R COLLECTORS WITH THIRD TUBE, PROPYLENE GLYCOL 50% [mm WC]

No. collectors	Gross surface area [m ²]	ΔP [mm wc] with 45 l/h/m ²	ΔP [mm wc] with 40 l/h/m ²	ΔP [mm wc] with 35 l/h/m ²
1	3.18	41	33	26
2	6.36	134	108	86
3	9.54	349	284	224
4	12.72	722	588	465
5	15.90	1290	1048	830
6	19.08	2078	1705	1337

Pressure losses X-RAY 10R
including 3rd tube, propylene glycole 50%



SIZING DISTANCES [L]



Solar rays in- clination angle α [°]	Solar collector inclination angle β [°]		
	35 °	45 °	50 °
15	4.1	5.1	5.5
25	2.3	2.8	3
35	1.5	2	2.2

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu $\varnothing_e/\varnothing_i$ [mm]
1	140	18/16
2	280	18/16
3	420	22/20
4	560	22/20
5	700	28/25
6	840	28/25

SIZE AND DIMENSIONS *

Number of collectors	Width with pitched roof [mm]
1	1756
2	3512
3	5268
4	7024
5	8780
6	10536

* The values refer to the Pleion mounting brackets

COD	DESCRIPTION
1010101532	X-RAY 15 R evacuated solar collector
1010101534	X-RAY 15 R evacuated solar collector WITH ECLIPSE SYSTEM
1030906982	SMART CONTROLLER ECLIPSE SYSTEM*

* One every 2 collectors

EVACUATED SOLAR COLLECTORS

X-RAY 18 R

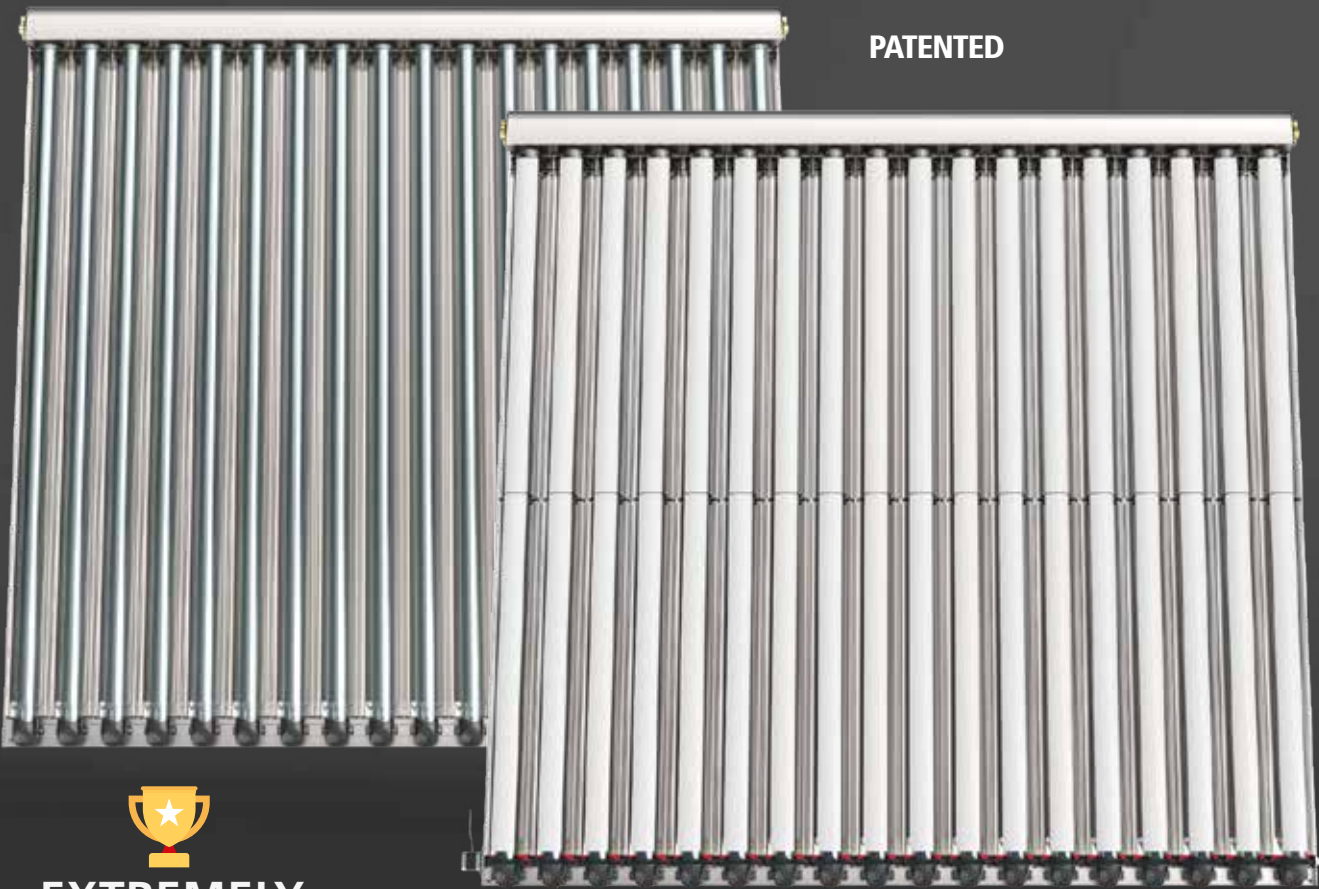
X-RAY 18 R + ECLIPSE SYSTEM

 100% MADE IN PLEION



NEW
WORLD
LAUNCH

PATENTED



EXTREMELY
HIGH PERFORMANCE

621 kWh/m² year
50° Würzburg data



ECLIPSE
SYSTEM



*EXTENDED WARRANTY



HAIL PROTECTION



X18 -RAY R EVACUATED SOLAR COLLECTORS

The super efficient collector even with an ANTI-STAGNATION system ECLIPSE SYSTEM

The X-RAY 18 R high performance evacuated tube collector is comprised of 18 tubes with an external diameter of 58 mm made of 3.3 borosilicate glass with a double cavity, inside of which a vacuum is created to eliminate heat loss to the outside environment.

The internal hydraulic circuit is made of Ø 18x0.7 mm copper connecting pipes with ¾" M welded couplings in each glass tube by an equal number of Ø 8x0.6 mm U-bent copper outlet and return pipes in which the solar heat transfer fluid flows for heating.

The entire external structure of the collector is made of anodised aluminium while the side closures on the collector are made of thermoplastic with slots to allow natural air circulation inside the collector head and eliminate internal condensation that could form during the winter, thus protecting the insulation from deterioration.
Reversible collector with water coupling and temperature probe ready on both sides.

PARALLEL CONNECTION

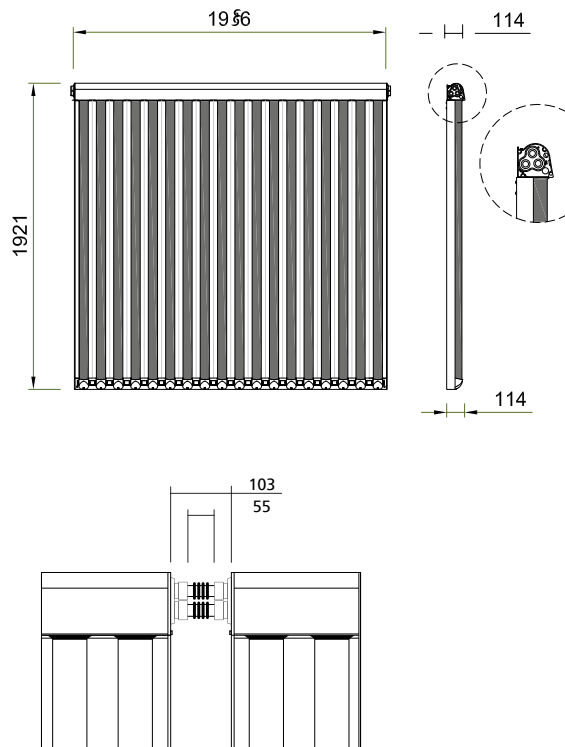
WITH THE ADDITION OF AN INTEGRATED THIRD TUBE

Thanks to the third tube and the third coupling with the X-RAY 18 R collector, 4 collectors can be connected in parallel in a single string, creating a single collector in terms of energy.

With the hydraulic connection systems, creating the connection between each panel is extremely easy, quick and efficient, with "no welding or special tools" required. The connections also function as expansion joints besides ensuring an excellent view of the system due to the lack of piping on the roof.

X-RAY 18 R with **ECLIPSE** ANTI-STAGNATION

- AUTOMATIC ANTI-STAGNATION SYSTEM that protects the collector from overtemperature.
- SMART APP CONTROL



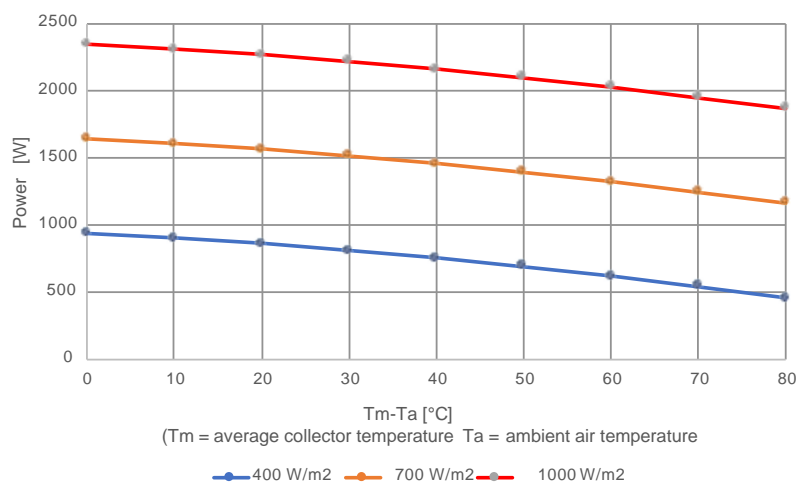
EVACUATED SOLAR COLLECTORS
X-RAY 18R - AREA 3.82 m²

X-RAY 18 R

TECHNICAL FEATURES

TECHNICAL FEATURES		
Evacuated tubes	[No.]	18
Maximum number of batter collectors recommended	[No.]	4
Attachments	[No.]	6
Couplings dimensions	[Ø]	¾" M
Aperture surface	[m²]	3.4457
Absorption surface	[m²]	4.62
Gross surface area	[m²]	3.82
Dimensions (LxHxD)	[mm]	1986 x 1921 x 114
Head insulation thickness, aluminised glass wool insulation.	[mm]	47
Evacuated tubes Diameter-Length	[mm]	58/47 - 1800
Recommended inclination angle	[°]	15-75 °
Weight	[kg]	72
Heat transfer fluid content	[litres]	3.21
PERFORMANCE		
η_0 Optical efficiency (ref. gross surface area)	-	0.615
k1 transmission coefficient (ref. gross surface area)	[W/m²K]	0.850
K2 transmission coefficient (ref. gross surface area)	[W/m²K²]	0.0009
Nominal power	[W]	2349
Angle-of-incidence correction factor	[K50°]	1,14T/0,91L
Thermal capacity (ref. aperture)	[kJ/m²K]	50.9
Energy produced annually ISO 9806:2013 – Würzburg – Temperature 50°C	[kWh]	2371
Energy produced annually ISO 9806:2013 – Würzburg – Temperature 75°C	[kWh]	1929
Test Report ISO 9806:2013	-	TZSB IZES
CERTCO DIN Registration number	-	011-752423 R
Recommended capacity per collector	[l/h]	150
Stagnation temperature	[°C]	279
Maximum pressure	[bar]	10

POWER CURVES X-RAY 18R

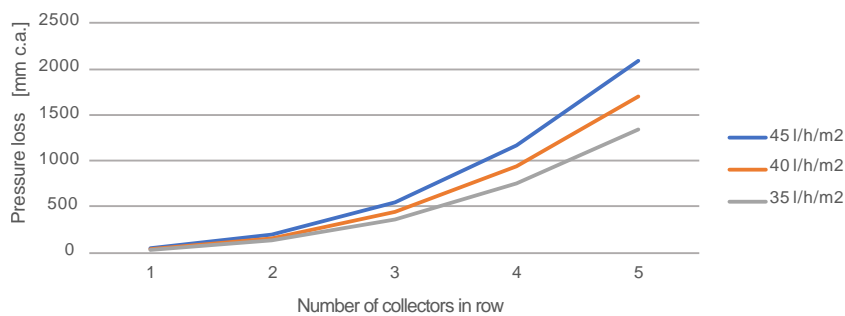


POWER [W]	SOLAR RADIATION [W/m²]		
Tm-Ta [°C]	400	700	1000
0	940	1645	2349
10	904	1609	2313
20	861	1566	2271
30	811	1516	2221
40	755	1460	2164
50	691	1396	2101
60	621	1326	2031
70	544	1249	1954
80	460	1165	1870

LOSS OF LOAD X-RAY 18R COLLECTORS WITH THIRD TUBE, PROPYLENE GLYCOL 50% [mm WC]

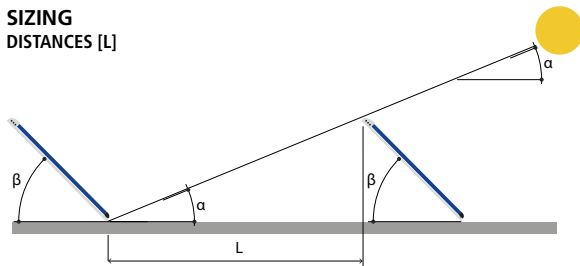
No. collectors	Gross surface area [m2]	ΔP [mm wc] with 45 l/h/m2	ΔP [mm wc] with 40 l/h/m2	ΔP [mm wc] with 35 l/h/m2
1	3.82	52	42	34
2	7.64	204	166	130
3	11.46	554	449	356
4	15.28	1162	943	748
5	19.10	2087	1700	1342

Pressure losses X-RAY 10R including 3rd tube, propylene glycole 50%



Pressure losses X-RAY 10R

SIZING DISTANCES [L]



Solar rays inclination angle α [°]	Solar collector inclination angle β [°]		
	35 °	45 °	50 °
15	4.1	5.1	5.5
25	2.3	2.8	3
35	1.5	2	2.2

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu $\varnothing_e/\varnothing_i$ [mm]
1	165	15x1
2	330	18x1
3	495	22x1
4	660	28x1.5

SIZE AND DIMENSIONS *

Number of collectors	Width with pitched roof [mm]
1	2086
2	4172
3	6258
4	8344

* The values refer to the Pleion mounting brackets

COD	DESCRIPTION
1010101802	X-RAY 18R evacuated solar collector
1010101803	X-RAY 18R evacuated solar collector WITH ECLIPSE SYSTEM*
1030906982	SMART CONTROLLER ECLIPSE SYSTEM*

* One every 2 collectors

EVACUATED SOLAR COLLECTORS

X-RAY 21 R

X-RAY 21 R + ECLIPSE SYSTEM

 100% MADE IN PLEION



NEW
WORLD
LAUNCH

PATENTED



EXTREMELY
HIGH PERFORMANCE

648 kWh/m² year
50° Würzburg data



ECLIPSE
SYSTEM



*EXTENDED WARRANTY



HAIL PROTECTION



ACTIVATE THE
WARRANTY
ONLINE!

X21 -RAY R EVACUATED SOLAR COLLECTORS

The large surface collector, for large systems, super efficient and even with the **ANTI-STAGNATION** system **ECLIPSE SYSTEM**

The X-RAY 21 R high performance evacuated tube collector is comprised of 21 tubes with an external diameter of 58 mm made of 3.3 borosilicate glass with a double cavity, inside of which a vacuum is created to eliminate heat loss to the outside environment.

The internal hydraulic circuit is made of $\varnothing 18 \times 0.7$ mm copper connecting pipes with $\frac{3}{4}$ " M welded couplings in each glass tube by an equal number of $\varnothing 8 \times 0.6$ mm U-bent copper outlet and return pipes in which the solar heat transfer fluid flows for heating.

The entire external structure of the collector is made of anodised aluminium while the side closures on the collector are made of thermoplastic with slots to allow natural air circulation inside the collector head and eliminate internal condensation that could form during the winter, thus protecting the insulation from deterioration.
Reversible collector with water coupling and temperature probe ready on both sides.

PARALLEL CONNECTION

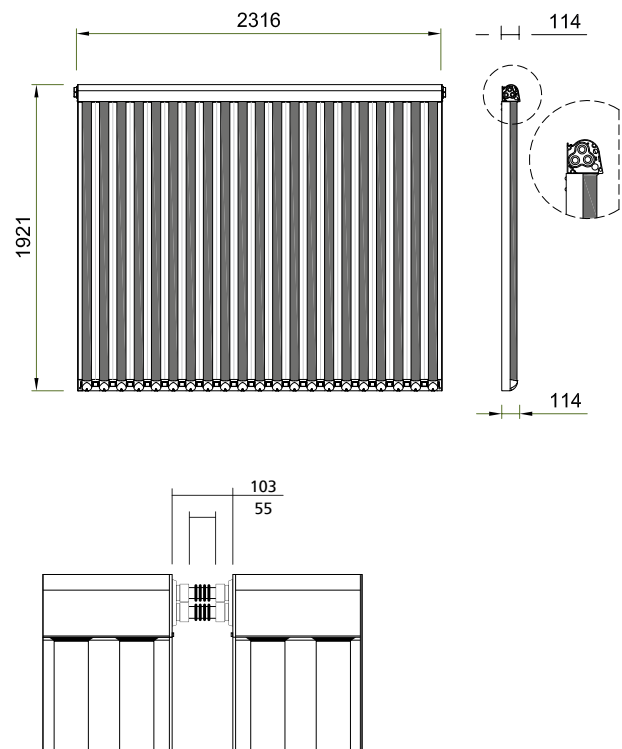
WITH THE ADDITION OF AN INTEGRATED THIRD TUBE

Thanks to the third tube and the third coupling with the X-RAY 21 R collector, 6 collectors can be connected in parallel in a single string, creating a single collector in terms of energy.

With the hydraulic connection systems, creating the connection between each panel is extremely easy, quick and efficient, with "no welding or special tools" required. The connections also function as expansion joints besides ensuring an excellent view of the system due to the lack of piping on the roof.

X-RAY 21 R with **ECLIPSE** SYSTEM ANTI-STAGNATION

- AUTOMATIC ANTI-STAGNATION SYSTEM that protects the collector from overtemperature.
- SMART APP CONTROL



EVACUATED SOLAR COLLECTORS
X-RAY 21 R - AREA 4.45 m²

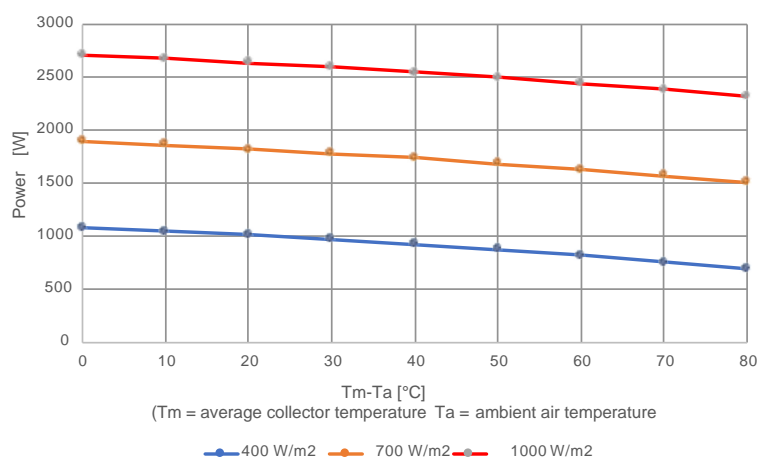
X-RAY 21 R

TECHNICAL FEATURES

TECHNICAL FEATURES		
Evacuated tubes	[N]	21
Maximum number of batter collectors recommended	[N]	3
Attachments	[N]	4 or 6
Couplings dimensions	[Ø]	3/4 " M
Gross surface area	[m ²]	4.45
Absorption surface	[m ²]	5.39
Aperture surface	[m ²]	4.02
Dimensions	[mm]	2316 x 1921 x 114
Head insulation thickness	[mm]	30
Evacuated tubes Diameter - Length	[mm]	58/47 - 1800
Recommended inclination angle	[°]	15 - 75
Empty weight	[kg]	80
Fluid content	[lt]	3.75
PERFORMANCE		
η_0 Optical efficiency (ref. gross surface area)	-	0.609
a1 linear transmission coefficient (ref. gross surface area)	[W/m ² K]	0.690
a2 linear transmission coefficient (ref. gross surface area)	[W m ² K ²]	0.005
Peak collector power	[W]	2710
Angle-of-incidence correction factor	[K50°]	1,14T/0,91L
Heat capacity	[kJ/m ² K]	34
Energy produced annually ISO 9806:2013 – Wurzburg – Temperature 50°C	[kWh]	2884
Energy produced annually ISO 9806:2013 – Wurzburg – Temperature 75°C	[kWh]	2499
Test Report ISO 9806:2013	[-]	Kiwa
CERTCO DIN Registration number	[-]	16082 Rev.0
Nominal flow-rate	[l/h]	3.00
Maximum stagnation temperature	[°C]	176
Maximum pressure	[bar]	10

The performance refers to the gross surface area in compliance with EN ISO 9806:2013

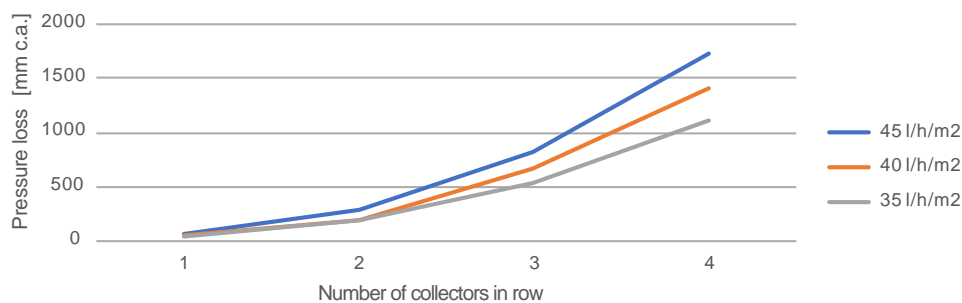
POWER CURVES X-RAY 21R



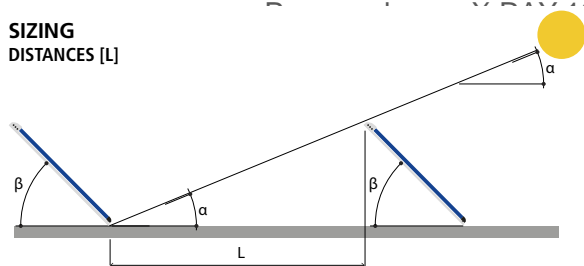
POWER [W]	SOLAR RADIATION [W/m²]		
Tm-Ta [°C]	400	700	1000
0	1084	1897	2710
10	1051	1864	2677
20	1014	1827	2640
30	972	1785	2598
40	926	1739	2552
50	875	1688	2501
60	820	1633	2446
70	760	1573	2386
80	696	1509	2322

LOSS OF LOAD X-RAY 21R COLLECTORS WITH THIRD TUBE, PROPYLENE GLYCOL 50% [mm WC]				
No. collectors	Gross surface area [m ²]	ΔP [mm wc] with 45 l/h/m ²	ΔP [mm wc] with 40 l/h/m ²	ΔP [mm wc] with 35 l/h/m ²
1	4.45	65	53	42
2	8.90	293	189	189
3	13.35	820	665	528
4	17.80	1730	1410	1113

Pressure losses X-RAY 10R
including 3rd tube, propylene glycole 50%



SIZING DISTANCES [L]



Solar rays inclination angle α [°]	Solar collector inclination angle β [°]		
	35 °	45 °	50 °
15	4.1	5.1	5.5
25	2.3	2.8	3.0
35	1.5	2.0	2.2

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu Øe/Øi [mm]
1	180	18/16
2	360	22/20
3	540	22/20
4	720	28/25

SIZE AND DIMENSIONS *

Number of collectors	Width with pitched roof [mm]
1	2416
2	4832
3	7248
4	9664

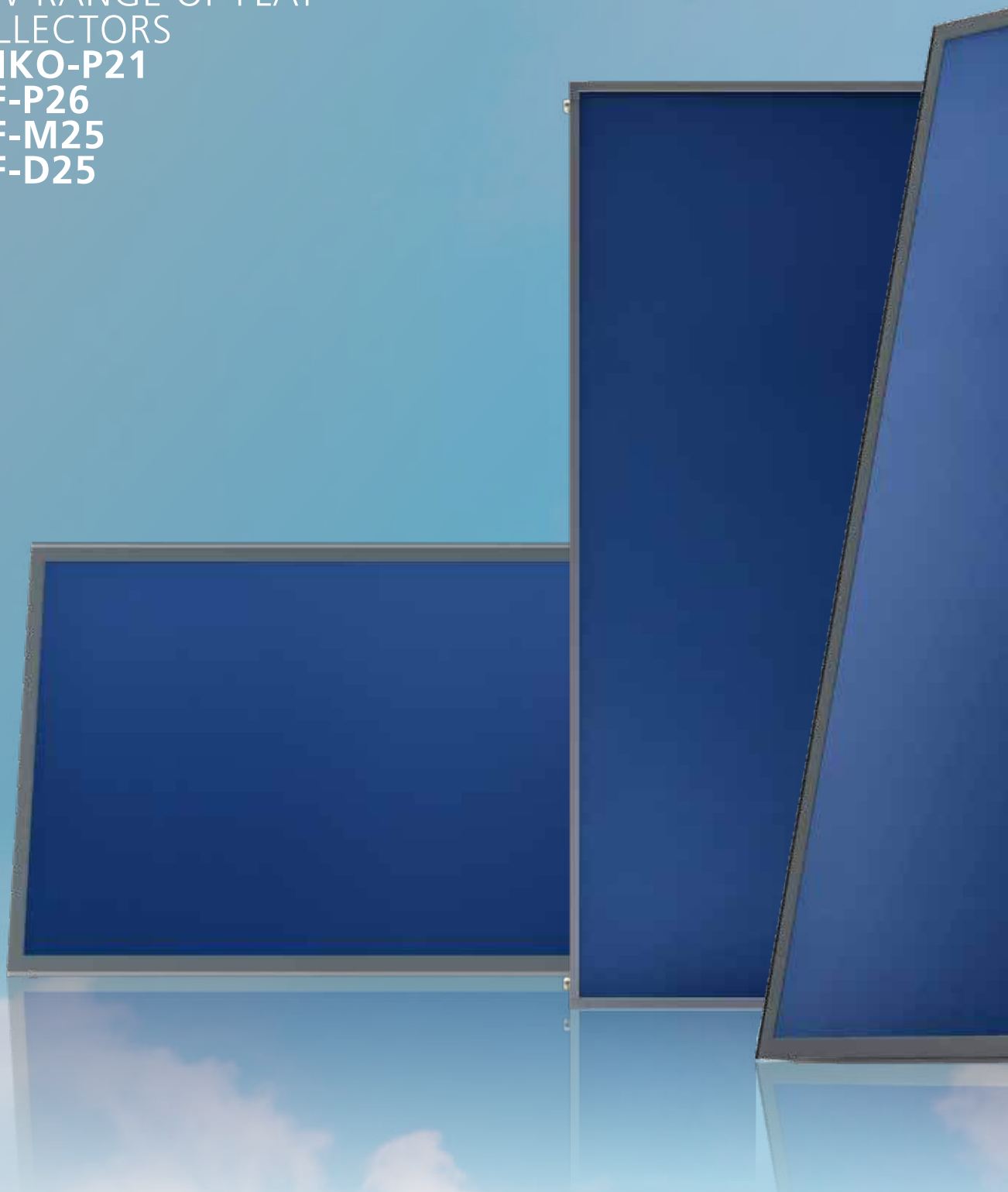
* The values refer to the Pleion mounting brackets

COD	DESCRIPTION
1010102111	X-RAY 21 R evacuated solar collector
1010102112	X-RAY 21R evacuated solar collector WITH ECLIPSE SYSTEM*
1030906982	SMART CONTROLLER ECLIPSE SYSTEM*

* One every 2 collectors

COLLECTORS SOLAR THERMAL PLANS

NEW RANGE OF FLAT
COLLECTORS
UNIKO-P21
KSF-P26
KSF-M25
KSF-D25



HIGH EFFICIENCY

**HIGHEST INCENTIVES
IN THE CATEGORY**

**100%
MADE IN EUROPE**

MODERN DESIGN

**EASY
INSTALLATION**



FLAT SOLAR COLLECTORS

UNIKO-P21



**EXTREMELY
HIGH PERFORMANCE**

589 kWh/m² year
50° Würzburg data



HORIZONTAL

VERTICAL



*EXTENDED WARRANTY



ACTIVATE THE
WARRANTY
ONLINE!

UNIKO-P21 FLAT SOLAR COLLECTORS

The flat, compact anti-reflective collector suitable for any installation

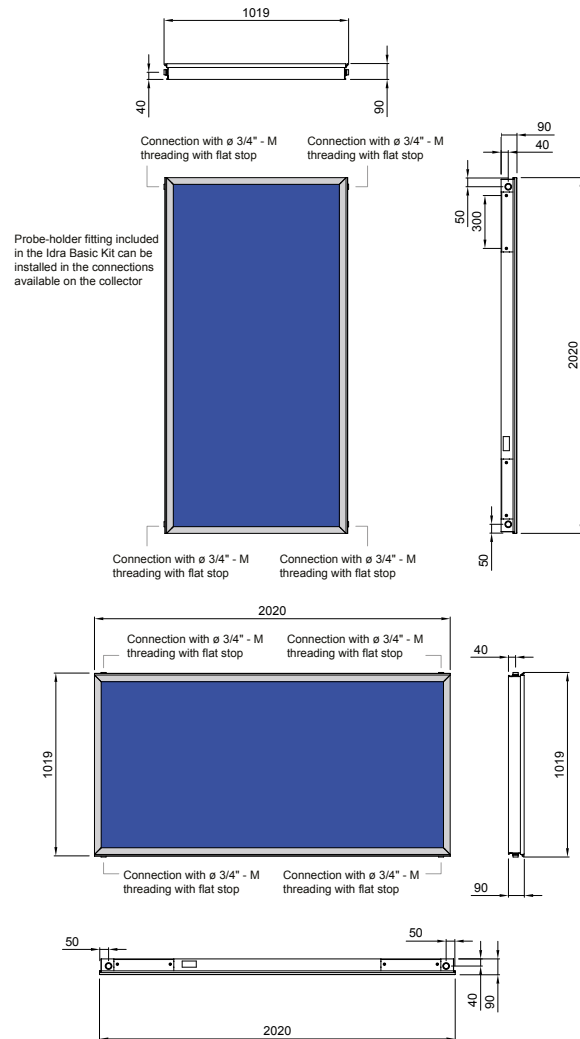
High efficiency flat solar collector made of top quality materials starting externally with the sturdy anthracite-coloured aluminium frame treated for protection against corrosion, stone wool insulation inside that is able to keep its insulating characteristics over time, single foil aluminium absorber that ensures high performance with its highly selective BLUETEC titanium collection surface, single harp internal copper circuitry made up of 2 horizontal distribution tubes and 10 ultrasound-welded vertical tubes. Due to its nature, the hydraulic circuitry is characterised by low pressure drop values, which allow the creation of strings of up to 8 collectors and reduce the consumption of the system circulator with subsequent energy savings.

External connections with 4 $\frac{3}{4}$ " couplings with sealing o-rings to be created using water connection accessories:

- UNIKO-P21/KSF-P26 idra basic set needed at the end of each string and made up of 1 brass body including probe-holder fitting with seal, manual air venting and $\frac{3}{4}$ " coupling with sealing o-ring for connection to the hot side return and 2 string closure caps;
- UNIKO-P21/KSF-P26 idra plus set needed to combine two collectors in series, comprised of 2 corrugated stainless steel expansion joints with $\frac{3}{4}$ "F swivel joint;
- H UNIKO-P21/KSF-P26 hydra plus set needed to combine two collectors in series horizontally, comprised of 1 corrugated stainless steel completely insulated section with $\frac{3}{4}$ "F swivel joints and 2 closing caps.

Cover with 3.2 mm anti-reflective glass with high mechanical strength and low iron content to ensure maximum light transmission, capable of capturing as much energy as possible as well as being treated internally to reflect the infrared rays generated by the absorber, thus retaining the heat otherwise emitted externally by the heated glass. The cover has a moulded seal made of EPDM that is resistant to UV radiation and high temperatures.

The UNIKO-P21 collector is reversible for vertical or horizontal installation thanks to the hydraulic accessories, while screw or hook mounting systems are available for a pitched roof (upon request, a raised system for all roofs with low pitches that can increase the inclination angle of the collector up to 15°) and a flat roof, and with Universal Flush Mount for all types of roofs. The UNIKO-P21 collector is light, easy to install, extremely heat efficient, and reliable over time. Ideal for large and small domestic hot water systems.



IDRA BASIC SET
UNIKO-P21/KSF-P26



IDRA PLUS SET
UNIKO-P21/KSF-P26



IDRA H PLUS SET
UNIKO-P21/KSF-P26

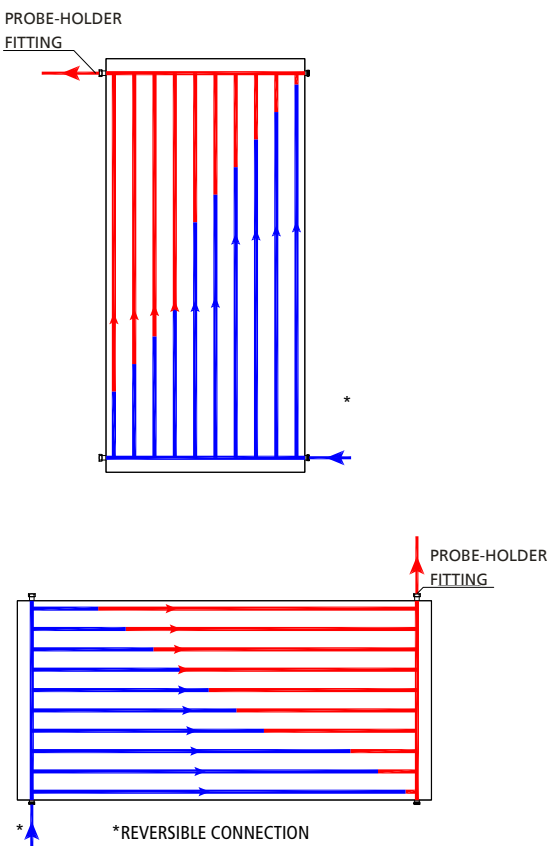


UNIKO-P21

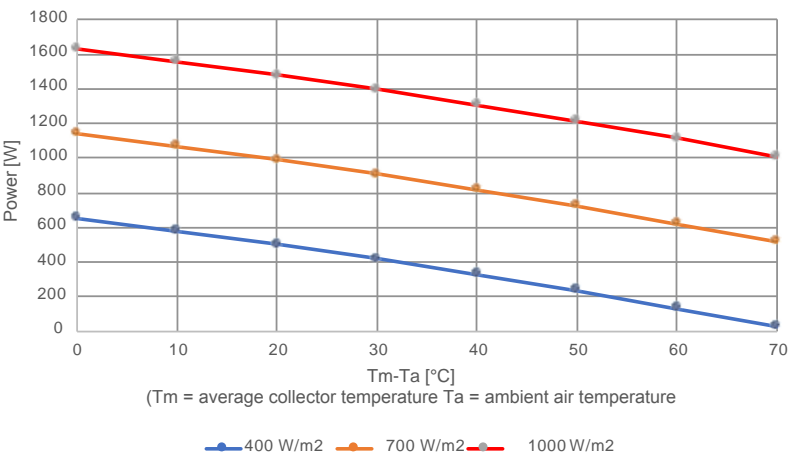
TECHNICAL FEATURES

TECHNICAL FEATURES		
Dimensions	[mm]	[2020x1019x90]
Gross surface area	[m ²]	2.06
Aperture surface	[m ²]	1.93
Empty weight	[kg]	33.7
Fluid capacity	[l]	0.87
Max operating pressure	[bar]	10
Mineral wool insulation	[mm]	40 bottom - 10 side
a1 linear transmission coefficient (ref. gross surface area)	[W/m ² K]	3.342
a2 linear transmission coefficient (ref. gross surface area)	[W/m ² K ²]	0.014
η_0 Optical efficiency (ref. gross surface area)	-	0.791
Absorption coefficient - harp type	[%]	95
Emission coefficient	[%]	<5
Transmission coefficient	[%]	96.7
Distribution manifold pipe	[mm]	¾" M x 4
Glass covering thickness	[mm]	3.2
Maximum stagnation temperature	[°C]	197
Minimum pitch	[°]	15
Maximum pitch	[°]	75
Peak collector power	[W]	1629
Angle of incidence correction factor	[K50°]	0.95

PERFORMANCE REFERS TO THE APERTURE SURFACE

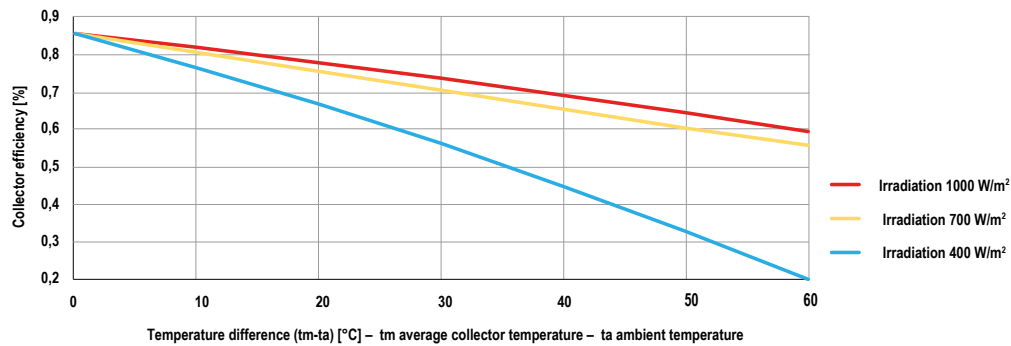


POWER CURVES UNIKO P21

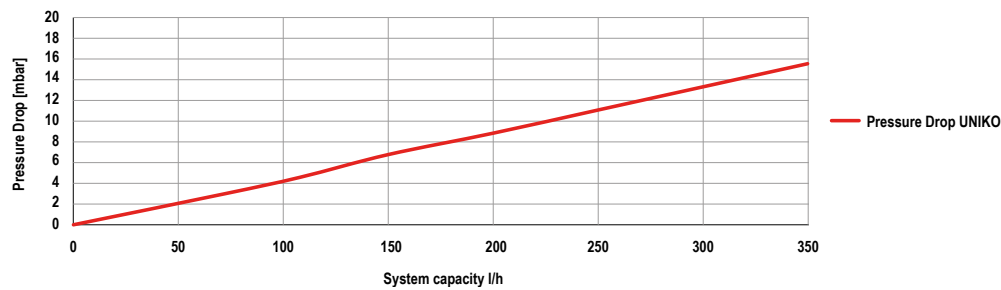


POWER [W]	SOLAR RADIATION [W/M2]		
Tm-Ta [°C]	400	700	1000
0	652	1141	1629
10	580	1069	1558
20	503	991	1480
30	419	908	1397
40	330	819	1308
50	235	724	1213
60	134	623	1112
70	28	517	1006

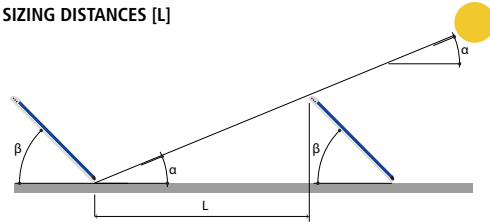
UNIKO-P21 EFFICIENCY CURVES with the variation of radiation 400-700-1000 W/m² and temperature difference



UNIKO-P21 COLLECTOR LOAD LOSS with variation in the project capacity.



SIZING DISTANCES [L]



Solar rays inclination angle α [°]	Solar collector inclination angle β [°]	
	VERTICAL 45° UNIKO-P21	HORIZONTAL 45° UNIKO-P21
15	5.3	2.8
25	3.1	1.6
35	2.1	1.1

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu $\varnothing_e/\varnothing_i$ [mm]
1	70	18/16
2	140	18/16
3	210	18/16
4	280	18/16
5	350	22/20
6	420	22/20
7	490	22/20
8	560	22/20

SIZE AND DIMENSIONS

Number of collectors	Width with pitched and flat roof [mm]	Width with pitched and flat roof [mm]
	UNIKO-P21 vertical	UNIKO-P21 horizontal
1	1120	2100
2	2200	4200
3	3310	6300
4	4430	8400
5	5550	10500
6	6660	12600
7	7780	14700
8	8900	16800

No. collectors per string	1	2	3	4	5	6	7	8	ALWAYS VERTICAL HORIZONTAL
No. UNIKO-P21 and KSF-P26 idra basic sets	1	1	1	1	1	1	1	1	
No. UNIKO-P21 and KSF-P26 idra plus sets	0	1	2	3	4	5	6	7	
No. H UNIKO-P21 and KSF-P26 idra plus sets	0	1	2	3	4	5	6	7	

Hydraulic accessories for creating a string

COD	DESCRIPTION
1020100131	UNIKO-P21 flat collector
1030907481	UNIKO-P21 and KSF-P26 idra basic set
1030907491	UNIKO-P21 and KSF-P26 idra plus set
1030907641	H UNIKO-P21 and KSF-P26 idra plus set

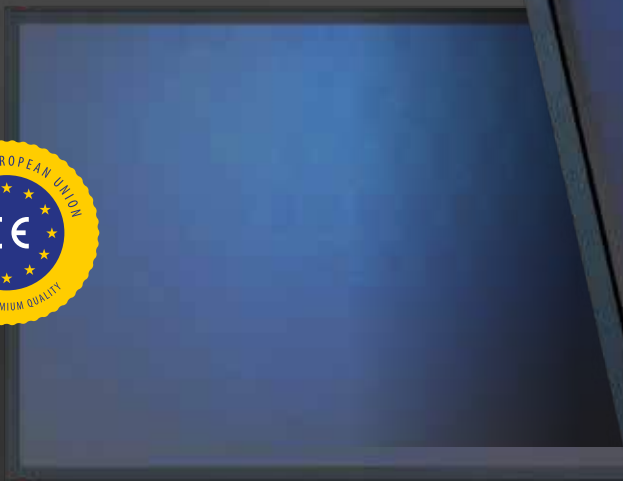
FLAT SOLAR COLLECTORS

KSF-P26

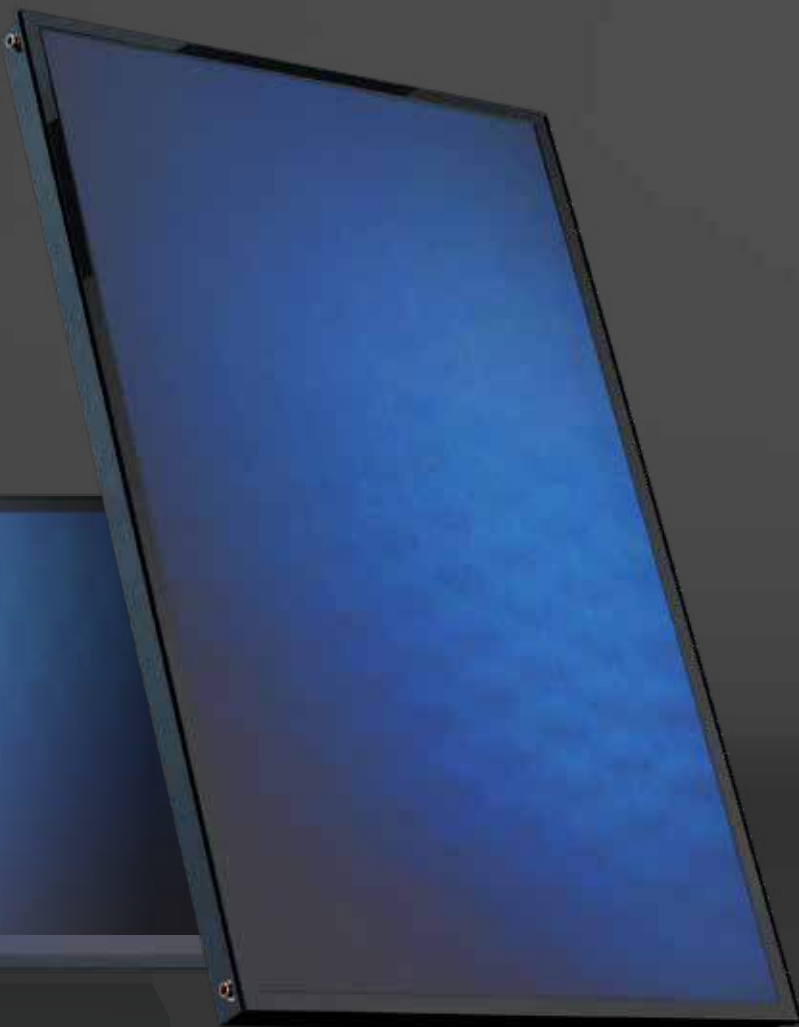


EXTREMELY
HIGH PERFORMANCE

589 kWh/m² year
50° Würzburg data



HORIZONTAL



VERTICAL



*EXTENDED WARRANTY



ACTIVATE THE
WARRANTY
ONLINE!

KSF-P26 FLAT SOLAR COLLECTORS

The flat, high efficiency anti-reflective panel with a large surface and for any installation.

High efficiency flat solar collector made of top quality materials starting externally with the sturdy anthracite-coloured aluminium frame treated for protection against corrosion, high density stone wool insulation inside that is able to keep its insulating characteristics over time, single foil aluminium absorber that ensures high performance with its highly selective BLUETEC titanium collection surface, single harp internal copper circuitry made up of 2 horizontal distribution tubes and 13 ultrasound-welded vertical tubes. Due to its nature, the hydraulic circuitry is characterised by low pressure drop values, which allow the creation of strings of up to 8 collectors and reduce the consumption of the system circulator with subsequent energy savings.

External connections with 4 $\frac{3}{4}$ " couplings with sealing o-rings to be created using water connection accessories:

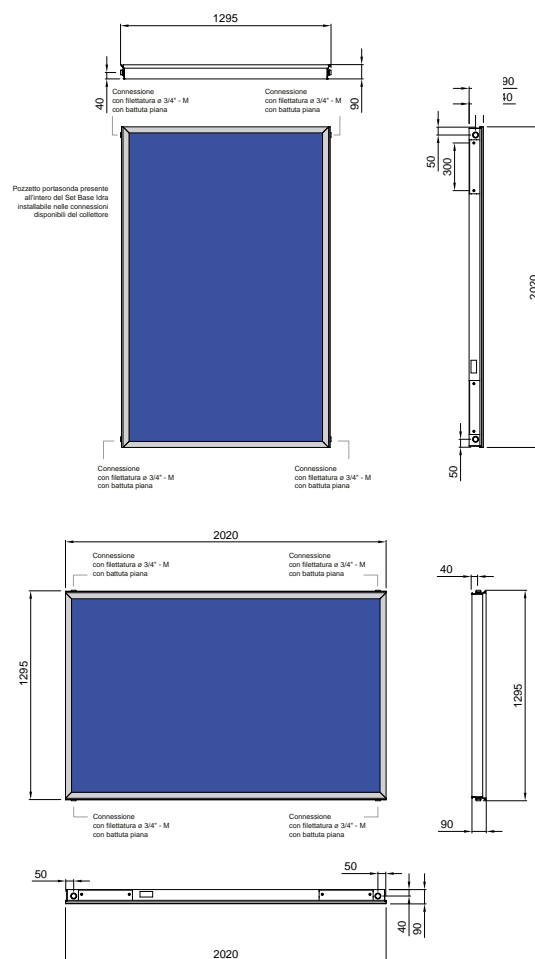
UNIKO-P21/KSF-P26 idra basic set needed at the end of each string and made up of 1 brass body including probe-holder fitting with seal, manual air vent and $\frac{3}{4}$ " coupling with sealing o-ring for connection to the hot side return and 2 string closure caps;

UNIKO-P21/KSF-P26 idra plus set needed to combine two collectors in series, comprised of 2 corrugated stainless steel expansion joints with $\frac{3}{4}$ "F swivel joint;

H UNIKO-P21/KSF-P26 hydra plus set needed to combine two collectors in series horizontally, comprised of 1 corrugated stainless steel completely insulated section with $\frac{3}{4}$ "F swivel joints and 2 closing caps.

Cover with 3.2 mm anti-reflective glass with high mechanical strength and low iron content to ensure maximum light transmission, capable of capturing as much energy as possible as well as being treated internally to reflect the infrared rays generated by the absorber, thus retaining the heat otherwise emitted externally by the heated glass. The cover has a moulded seal made of EPDM that is resistant to UV radiation and high temperatures.

The KSF-P26 collector is reversible for vertical or horizontal installation thanks to the hydraulic accessories, while screw or hook mounting systems are available for a pitched roof (upon request, a raised system for all roofs with low pitches that can increase the inclination angle of the collector up to 15°) and a flat roof, and with Universal Flush Mount for all types of roofs. The KSF-P26 collector is light, easy to install, extremely heat efficient, and reliable over time. Ideal for large and small domestic hot water systems.



IDRA BASIC SET
UNIKO-P21/KSF-P26



IDRA PLUS SET
UNIKO-P21/KSF-P26



IDRA H PLUS SET
UNIKO-P21/KSF-P26

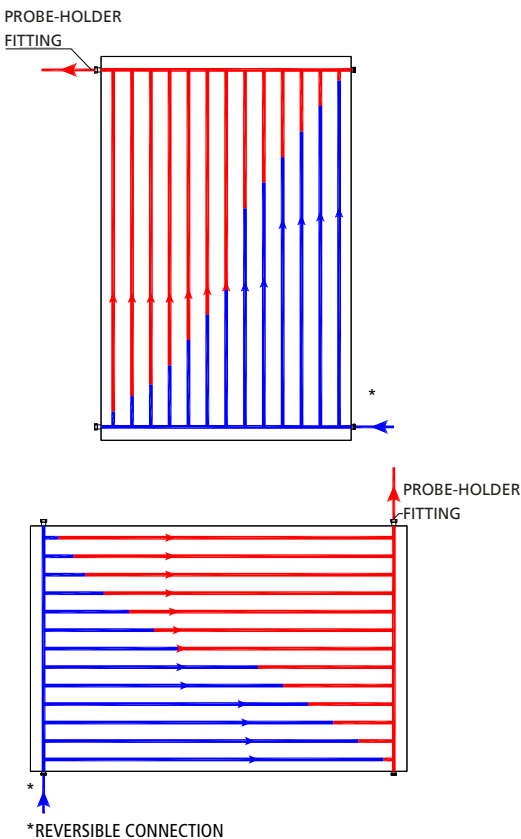


KSF-P26

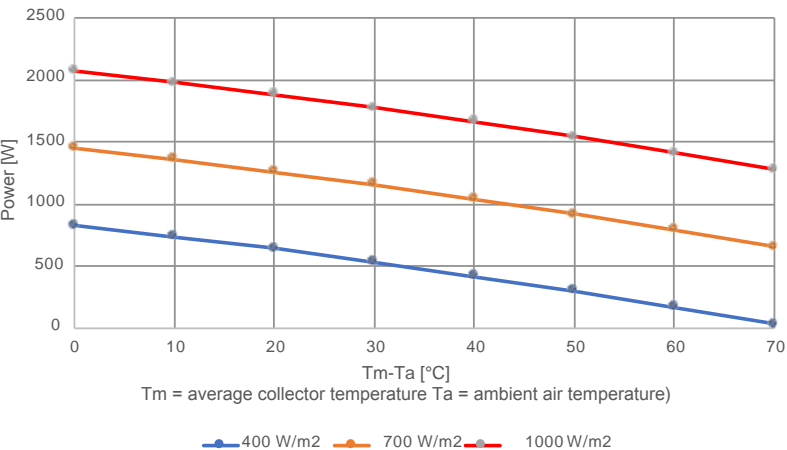
TECHNICAL FEATURES

TECHNICAL FEATURES		
Dimensions	[mm]	[2020x1295x90]
Gross surface area	[m²]	2.62
Aperture surface	[m²]	2.47
Empty weight	[kg]	41.8
Fluid capacity	[l]	1.1
Max operating pressure	[bar]	10
Mineral wool insulation	[mm]	40 bottom - 10 side
a1 linear transmission coefficient (ref. gross surface area)	[W/m²K]	3.342
a2 linear transmission coefficient (ref. gross surface area)	[W/m²K²]	0.014
η_0 Optical efficiency (ref. gross surface area)	-	0.791
Absorption coefficient - harp type	[%]	95
Emission coefficient	[%]	<5
Transmission coefficient	[%]	96.7
Distribution manifold pipe	[mm]	¾" M x 4
Glass covering thickness	[mm]	3.2
Maximum stagnation temperature	[°C]	196.6
Minimum pitch	[°]	15
Maximum pitch	[°]	75
Peak collector power	[W]	2072
Angle of incidence correction factor	[K50°]	0.95

PERFORMANCE REFERS TO THE APERTURE SURFACE

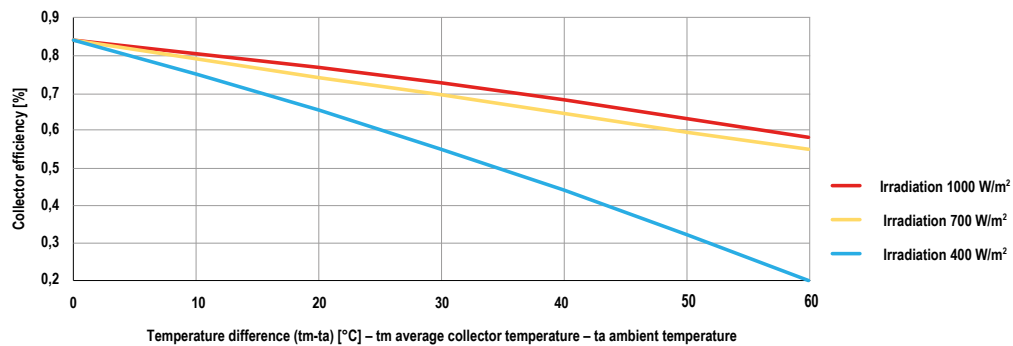


POWER CURVES KSF P26

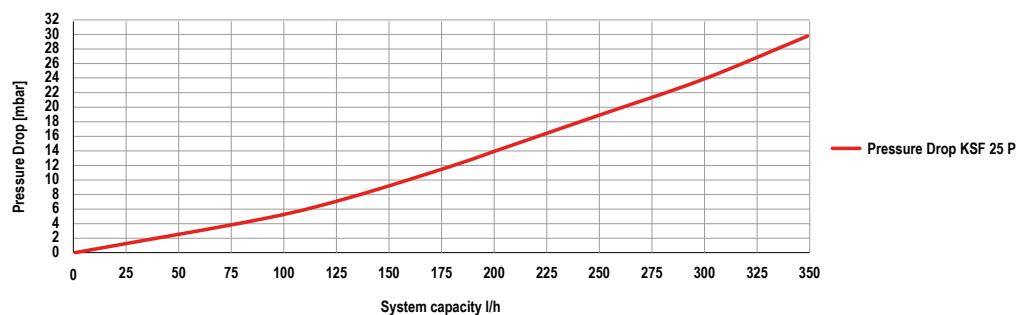


POWER [W]	SOLAR RADIATION [W/M2]		
Tm-Ta [°C]	400	700	1000
0	829	1451	2072
10	738	1359	1981
20	639	1261	1883
30	533	1155	1777
40	420	1042	1663
50	299	921	1543
60	172	793	1415
70	36	658	1280

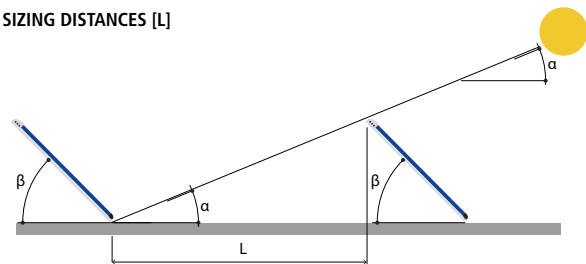
KSF-P26 EFFICIENCY CURVES with the variation of radiation 400-700-1000 W/m² and temperature difference



KSF-P26 LOAD LOSS with variation in the project capacity.



SIZING DISTANCES [L]



Solar rays inclination angle α [°]	Solar collector inclination angle β [°]	
	VERTICAL 45° KSF-P26	HORIZONTAL 45° KSF-P26
15	5.3	3.5
25	3.1	2
35	2.1	1.3

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu $\varnothing_e/\varnothing_i$ [mm]
1	90	18/16
2	180	18/16
3	270	18/16
4	360	18/16
5	450	22/20
6	540	28/25
7	630	28/25
8	720	28/25

SIZE AND DIMENSIONS

Number of collectors	Width with pitched and flat roof [mm] KSF-P26	Width with pitched and flat roof [mm] KSF-P26
1	1414	2100
2	2748	4200
3	4142	6300
4	5536	8400
5	6930	10500
6	8324	12600
7	9718	14700
8	11112	16800

No. collectors per string	1	2	3	4	5	6	7	8	ALWAYS VERTICAL HORIZONTAL
No. UNIKO-P21 and KSF-P26 idra basic sets	1	1	1	1	1	1	1	1	
No. UNIKO-P21 and KSF-P26 idra plus sets	0	1	2	3	4	5	6	7	
No. H UNIKO-P21 and KSF-P26 idra plus sets	0	1	2	3	4	5	6	7	
Hydraulic accessories for creating a string									
COD	DESCRIPTION								
1020100121	KSF-P26 flat collector								
1030907481	UNIKO-P21 and KSF-P26 idra basic set								
1030907491	UNIKO-P21 and KSF-P26 idra plus set								
1030907641	H UNIKO-P21 and KSF-P26 idra plus set								

FLAT SOLAR COLLECTORS

KSF-M25

HORIZONTAL



VERTICAL



*EXTENDED WARRANTY



ACTIVATE THE
WARRANTY
ONLINE!

KSF-M25 FLAT SOLAR COLLECTORS

The high efficiency large surface flat collector, convenient and suitable for any installation.

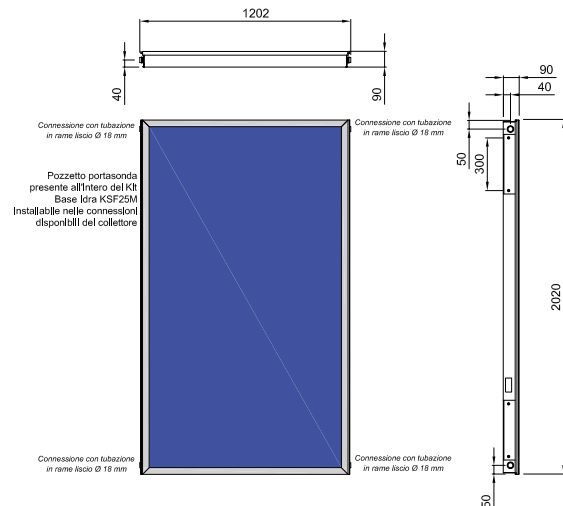
High efficiency flat solar collector made from innovative, high-grade materials, starting with a robust aluminium outer frame and treated with special additives to protect against corrosion. The higher density stone wool insulation can maintain its insulation characteristics over time. The high-performance single foil aluminium absorber with selective blue PVD coating absorbs the maximum solar radiation. The single harp internal copper circuitry consists of 2 horizontal distribution pipes and 12 vertical ultrasonically welded pipes, providing maximum heat exchange and low pressure drops. The hydraulic circuitry is therefore characterised by low pressure drop values, which allow the creation of strings of up to 6 collectors and reduce the consumption of the system circulator with subsequent energy savings.

External connections with 4 smooth 18 mm in diameter copper connections, to be expanded by hydraulic connection accessories:

- KSF-M25 IDRA BASIC SET necessary for the beginning and end of each string, and made up of 1 brass body including probe-holder fitting and sealing connections, 2 brass fittings 3/4" x 18 mm, 2 brass plugs 18 mm to tighten, for connection to the outlet and return of each string;
- KSF-M25 IDRA PLUS SET necessary to combine two collectors in series, made up of 2 expansion joints designed to keep thermal expansion to a minimum.

Covering with 3.2 mm anti-reflective glass with high mechanical strength and low iron content, to ensure maximum light transmission to the collector and capture as much energy as possible. The internal treatment allows the infrared rays generated by the absorber to be reflected, thus retaining the heat that would otherwise be emitted externally by the heated glass. The cover has a moulded seal made of EPDM that is resistant to UV radiation and high temperatures.

The KSF 25M collector is reversible for vertical or horizontal installation using the hydraulic accessories. Mounting systems are available for pitched roofs, with screws or fasteners and for flat roofs, as well as universal flush mount for all types of roofing. Thanks to its light weight, reduced cost, ease of installation, high thermal efficiency, and reliability over time, the KSF 25M collector is ideal for small and large domestic hot water systems.



**IDRA BASIC SET
KSF-M25**



**IDRA PLUS SET
KSF-M25**

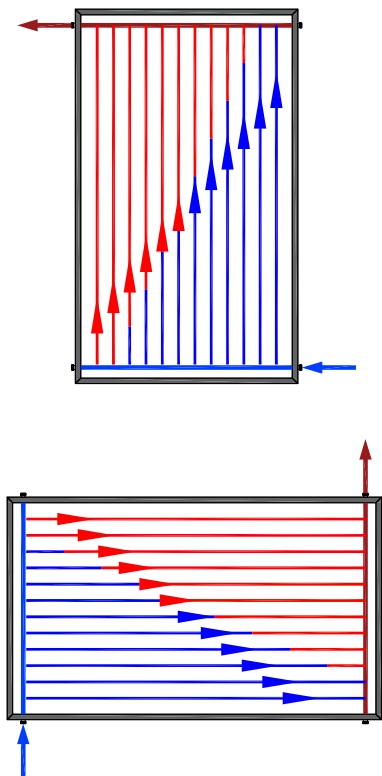


KSF-M25

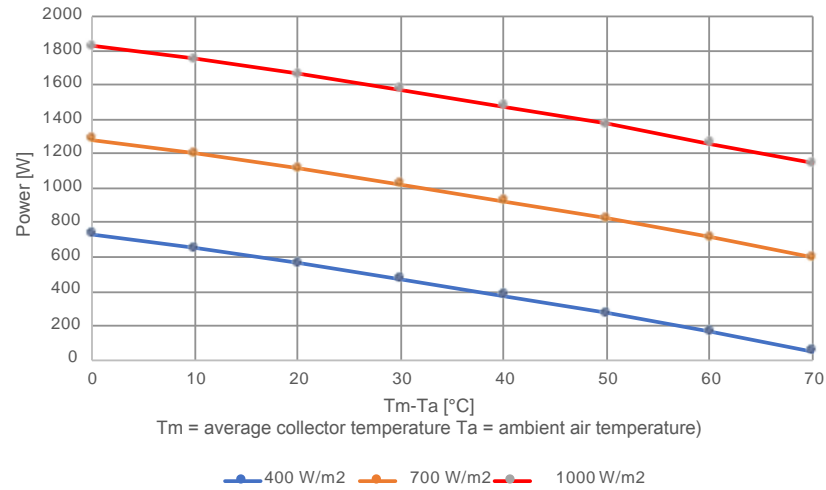
TECH DATA

TECHNICAL FEATURES		
Dimensions	[mm]	2020 x 1202 x 90
Gross surface area	[m ²]	2.43
Aperture surface	[m ²]	2.29
Empty weight	[kg]	40.4
Fluid content	[lt]	1
Max operating pressure	[bar]	10
Mineral wool insulation	[mm]	40 bottom - 10 side
a1 linear transmission coefficient (ref. gross surface area)	[W/m ² K]	3.168
a2 linear transmission coefficient (ref. gross surface area)	[W/m ² K ²]	0.012
η ₀ Optical efficiency (ref. gross surface area)	-	0.753
Absorption coefficient - harp type	[%]	95 ± 2
Emission coefficient	[%]	5 ± 2
Transmission coefficient	[%]	91.6
Distribution manifold pipe	[mm]	Cu - 4 x 18 smooth
Glass covering thickness	[mm]	3.2
Maximum stagnation temperature	[°C]	201.2
Minimum pitch	[°]	15
Maximum pitch	[°]	75
Peak collector power	[W]	1830
Nominal flow-rate	[l/min]	1.2 - 1.5
Angle-of-incidence correction factor	[K50°]	0.94
Energy produced annually Würzburg - Temperature 50°	[kWh]	1224

PERFORMANCE REFERS TO THE APERTURE SURFACE

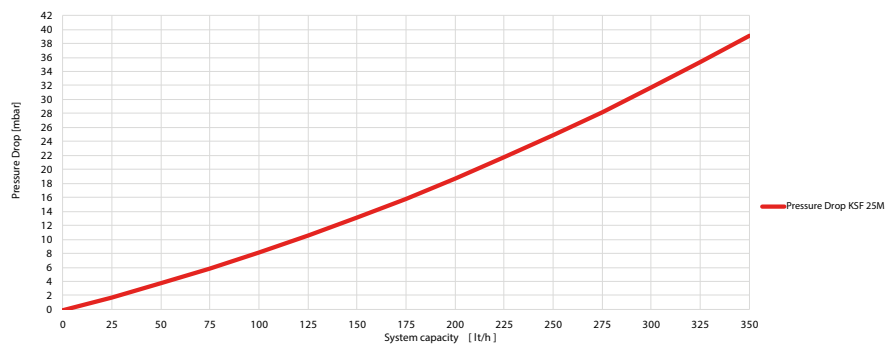


POWER CURVES KSF M25

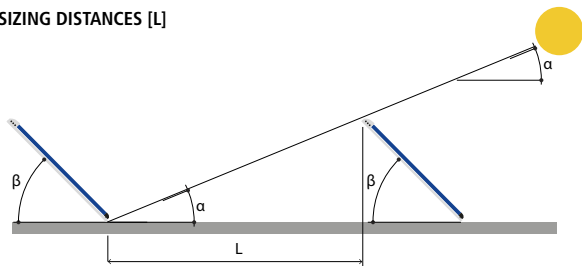


POWER [W]	SOLAR RADIATION [W/M2]		
Tm-Ta [°C]	400	700	1000
0	732	1281	1830
10	652	1201	1750
20	566	1115	1664
30	475	1024	1573
40	377	926	1475
50	274	823	1372
60	165	714	1263
70	50	599	1148

KSF-M25 LOAD LOSS with variation in the project capacity.



SIZING DISTANCES [L]



Solar rays inclination angle α [°]	Solar collector inclination angle VERTICALLY β [°]		
	30 °	45 °	50 °
15	4.0	5.3	5.8
25	2.2	3.1	3.3
35	1.5	2.1	2.2

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu $\varnothing_e/\varnothing_i$ [mm]
1	90	18/16
2	180	18/16
3	270	18/16
4	360	22/20
5	450	22/20
6	540	28/25
7	630	28/25
8	720	28/25

SIZE AND DIMENSIONS

Number of collectors	Width with pitched and flat roof [mm] KSF-P26
1	1280
2	2560
3	3840
4	5120
5	6400
6	7680
7	8960
8	10240

No. collectors per string	1	2	3	4	5	6	7	8	ALWAYS VERTICAL HORIZONTAL
No. KSF-M25 idra basic set	1	1	1	1	1	1	1	1	
No. KSF-M25 idra plus sets	0	1	2	3	4	5	6	7	
Hydraulic accessories for creating a string									
COD	DESCRIPTION								
1020100181	KSF-M25 flat collector								
1030908611	KSF-M25 idra basic set								
1030908621	KSF-M25 idra plus set								

FLAT SOLAR COLLECTORS

KSF-D25



*EXTENDED WARRANTY



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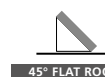
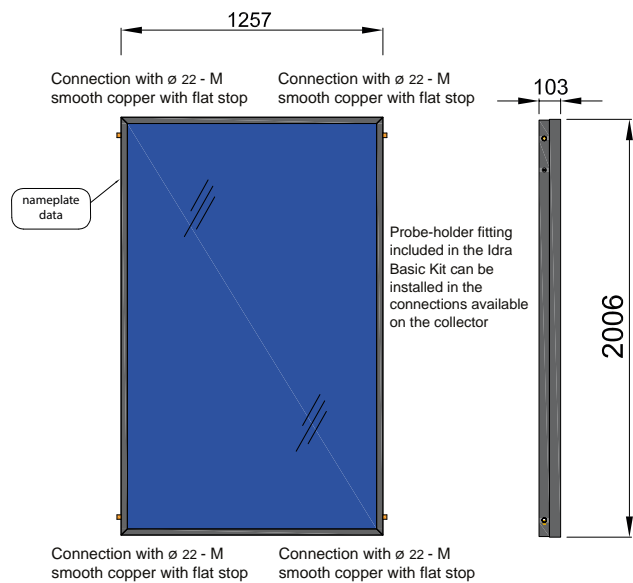
KSF-D25 FLAT SOLAR COLLECTORS

The solid and versatile large surface flat collector **for any installation.**

The KSF 25D collector is particularly sturdy thanks to the reinforced and welded aluminium profile frame and the 4 mm thick glass. It is also easy to install and connect thanks to the connections with 22 mm diameter copper tube.

- KSF-D25 idra basic set needed at the end of each string and made up of 1 brass body including probe-holder fitting with seal, manual air vent and coupling with sealing o-ring for connection to the hot side return and 2 string closure caps;
- KSF-D25 idra plus set needed to combine two collectors in series, made up of 2 joints;

Cover with 4.0 mm anti-reflective tempered, high transparency glass to ensure maximum light transmission, capable of capturing as much energy as possible as well as being treated internally to reflect the infrared rays generated by the absorber, thus retaining the heat otherwise emitted externally by the heated glass.



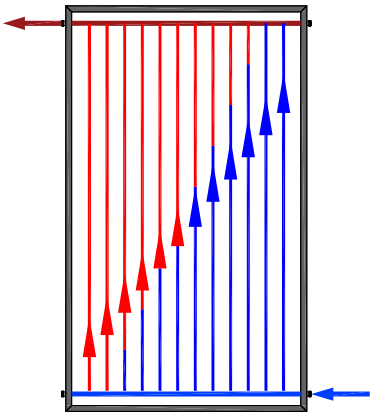
COD	DESCRIPTION
1020100191	KSF-D25 flat collector
1030908612	KSF-D25 idra basic set
1030908625	KSF-D25 idra plus set

KSF-D25

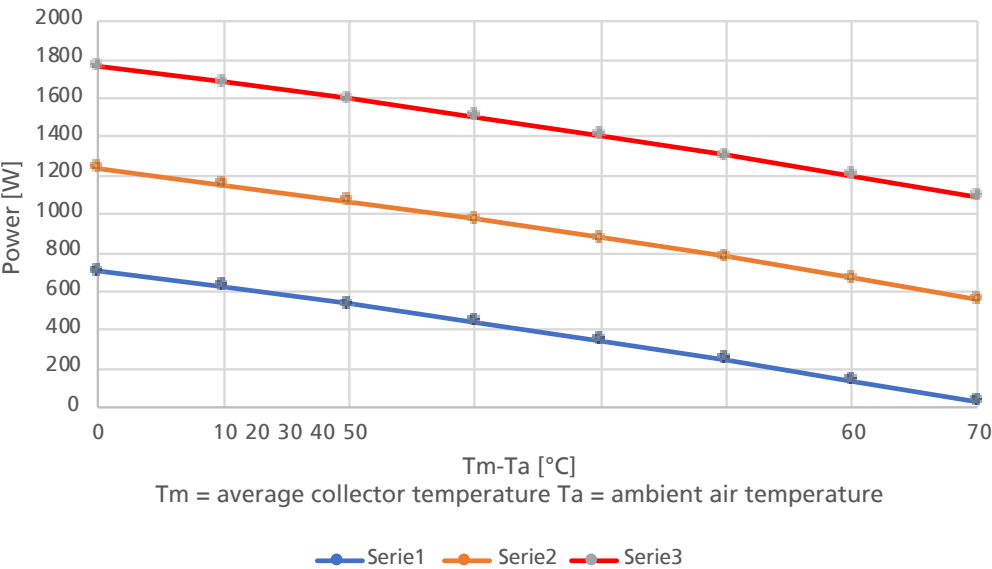
TECHNICAL FEATURES

TECHNICAL FEATURES		
Dimensions	[mm]	2006x1257x103
Gross surface area	[m ²]	2.52
Aperture surface	[m ²]	2.33
Empty weight	[kg]	46.50
Fluid content	[lt]	1.90
Max operating pressure	[bar]	16
Mineral wool insulation	[mm]	40 bottom - 10 side
a1 linear coefficient linear a1	[W/m ² K]	3.29
a2 linear coefficient quadratic a2	[W/m ² K ²]	0.010
η_0 Optical efficiency	[%]	72.7
Absorption coefficient	[%]	95
Emission coefficient	[%]	<5
Transmission coefficient	[%]	91
Water connections	[mm]	22 mm X 4
Glass covering thickness	[mm]	4.0
Maximum stagnation temperature	[°C]	185
Minimum pitch	[°]	15
Maximum pitch	[°]	75
Peak collector power	[W]	1830
Nominal flow-rate	[W]	1764
Angle-of-incidence correction factor	[K50°]	0.94

PERFORMANCE REFERS TO THE APERTURE SURFACE



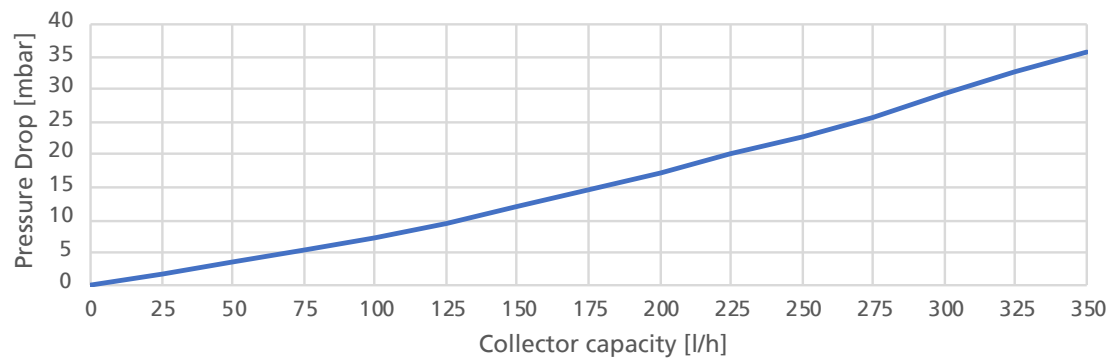
POWER CURVES KSF 25D



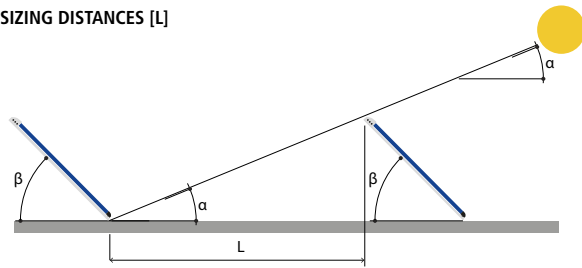
POWER [W]	SOLAR RADIATION [W/M2]		
Tm-Ta [°C]	400	700	1000
0	707	1237	1767
10	624	1154	1684
20	537	1067	1597
30	445	975	1505
40	348	878	1408
50	246	776	1306
60	139	669	1199
70	28	558	1088

KSF-D25 COLLECTOR LOAD LOSS with variation in the project capacity.

PRESSURE DROP collector KSF D25 as capacity changes



SIZING DISTANCES [L]



Solar rays inclination angle α [°]	Solar collector inclination angle VERTICALLY β [°]		
	30 °	45 °	50 °
15	4.0	5.3	5.8
25	2.2	3.1	3.3
35	1.5	2.1	2.2

TUBE SIZING FOR COLLECTOR HOOKUP TO THE ACCUMULATION TANK

Number of collectors	Recommended capacity [l/h]	Tubing Cu $\varnothing_e/\varnothing_i$ [mm]
1	90	18/16
2	180	18/16
3	270	18/16
4	360	22/20
5	450	22/20
6	540	28/25
7	630	28/25
8	720	28/25

No. collectors per string	1	2	3	4	5	6	7	8
No. KSF-D25 idra basic sets	1	1	1	1	1	1	1	1
No. KSF-D25 idra plus sets	0	1	2	3	4	5	6	7




Hydraulic accessories for creating a string

COD	DESCRIPTION
1020100191	KSF-D25 flat collector
1030908612	KSF-D25 idra basic set
1030908625	KSF-D25 idra plus set

X-RAY-R BEFESTIGUNGSSYSTEME




X-RAY 10R MOUNTING SYSTEM

IMPORTANT
ONE MOUNTING SET PER COLLECTOR

ROOF			DESCRIPTION	ART. NR.
PITCHED ROOF BRICK, SHINGLE, SLATE, ETC.	HOOK		X-RAY 10R MOUNTING KIT	1030909871
	SCREW		X-RAY 10R MOUNTING KIT	1030909991
30° FLAT ROOF	TRIANGLE SYSTEM		X-RAY 10R MOUNTING KIT	1030909952




X-RAY 15R MOUNTING SYSTEM

IMPORTANT
ONE MOUNTING SET PER COLLECTOR

ROOF			DESCRIPTION	ART. NR.
PITCHED ROOF BRICK, SHINGLE, SLATE, ETC.	HOOK		X-RAY 15R MOUNTING KIT	1030908651
	SCREW		X-RAY 15R MOUNTING KIT	1030908781
30° FLAT ROOF	TRIANGLE SYSTEM		X-RAY 15R MOUNTING KIT	1030908851

X-RAY 18R MOUNTING SYSTEM




IMPORTANT
ONE MOUNTING SET PER COLLECTOR

ROOF			DESCRIPTION	ART. NR.
PITCHED ROOF BRICK, SHINGLE, SLATE, ETC.	HOOK		X-RAY 18R MOUNTING KIT	1030908911
	SCREW		X-RAY 18R MOUNTING KIT	1030909101
30° FLAT ROOF	TRIANGLE SYSTEM		X-RAY 18R MOUNTING KIT	1030909141


*All prices include statutory VAT

X-RAY 21R MOUNTING SYSTEM

IMPORTANT ONE MOUNTING SET PER COLLECTOR

ROOF			DESCRIPTION	ART. NR.
PITCHED ROOF BRICK, SHINGLE, SLATE, ETC.	HOOK		X-RAY 21R MOUNTING KIT	1030908341
	SCREW		X-RAY 21R MOUNTING KIT	1030908421
30° FLAT ROOF	TRIANGLE SYSTEM		X-RAY 21R MOUNTING KIT	1030908461

X-RAY R Hydraulik-Sets

DESCRIPTION		ART. NR.
HYDRAULIC CONNECTION SET (A) One per row of collectors, with protective case for thermal insulation	X-RAY R 	1010100003
HYDRAULIC EXPANSION SET (B) For each additional collector, with protective case for thermal insulation	X-RAY R 	1030908532
BASIC HYDRAULIC SET (C) One per row of collectors, with protective case for thermal insulation	X-RAY R 	1030908512

*All prices include statutory VAT

FASTENINGS

FOR FLAT COLLECTORS KSF-P26/KSF-M25 / KSF-D25

FLAT COLLECTOR FASTENING SYSTEMS KSF-P26 / KSF-M25 / KSF-D25			
ATTENTION ACCESSORY COMPONENTS TO BE ORDERED SEPARATELY			
ROOF	COVER	FASTENING SET	COD.
SLOPING ROOF	SCREW SYSTEMS	BASE FASTENING SET P26/M25/D25	1030906972
		PLUS FASTENING SET VI P26/M25/D25	1030906973
	CORRUGATED SHEET METAL	VERTICAL EXTENSION KIT 1 COLLECTOR VI KSF-P26/ KSF-M25	1030906983
		HORIZONTAL BASE - 1 COLLECTOR VI KSF-P26	1030906984
	CRIMPED SHEET MET-AL	BASE FASTENING SET LA P26/M25/D25	1030906985
		PLUS FASTENING SET LA P26/M25/D25	1030906986
	HOOK SYSTEM	BASE FASTENING SET GI-T P26/M25/D25	1030906974
		PLUS FASTENING SET GI-T P26/M25/D25	1030906975
		BASE FASTENING SET GI-C P26/M25/D25	1030906976
		PLUS FASTENING SET GI-C P26/M25/D25	1030906977
	RECESSED	BASE REC. NEW SET 1 COLL. KSF-P26	1030909032
		EXT. REC. NEW SET 1 COLL. KSF-P26	1030909033
FLAT ROOF (inclination 25-45°)	TRIANGLE SYSTEM	BASE FASTENING SET TP P26/M25/D25	1030906978
		PLUS FASTENING SET TP P26/M25/D25	1030906979

FLAT COLLECTOR FASTENING SYSTEMS UNIKO-P21			
ATTENTION ACCESSORY COMPONENTS TO BE ORDERED SEPARATELY			
ROOF	COVER	FASTENING SET	COD.
SLOPING ROOF	SCREW SYSTEMS	VERTICAL BASE - 1 COLLECTOR VI UNIKO-P21	1030907581
		VERTICAL BASE - 2 COLLECTORS VI UNIKO-P21	1030907601
		VERTICAL EXTENSION KIT - 1 COLLECTOR VI UNIKO-P21	1030907591
		HORIZONTAL BASE - 1 COLLECTOR VI UNIKO-P21	1030907771
		HORIZONTAL EXTENSION KIT - 1 COLLECTOR VI UNIKO-P21	1030907801
	HOOK SYSTEM	VERTICAL BASE - 1 COLLECTOR GI UNIKO-P21	1030907731
		VERTICAL BASE - 2 COLLECTORS GI UNIKO-P21	1030907721
		VERTICAL EXTENSION KIT - 1 COLLECTOR GI UNIKO-P21	1030907741
		HORIZONTAL BASE - 1 COLLECTOR GI UNIKO-P21	1030907811
		HORIZONTAL EXTENSION KIT - 1 COLLECTOR GI UNIKO-P21	1030907821
	RECESSED	BASE REC. NEW SET 1 COLL. UNIKO P21	1030909034
		EXT. REC. NEW SET 1 COLL. UNIKO P21	1030909035
FLAT ROOF	TRIANGLE SYSTEM	VERTICAL BASE - 1 COLLECTOR TP UNIKO-P21	1030907611
		VERTICAL BASE - 2 COLLECTORS TP UNIKO-P21	1030907631
		VERTICAL EXTENSION KIT - 1 COLLECTOR TP UNIKO-P21	1030907621
		HORIZONTAL BASE - 1 COLLECTOR TP UNIKO-P21	1030907651
		HORIZONTAL EXTENSION KIT - 1 COLLECTOR TP UNIKO-P21	1030907751

NOTE

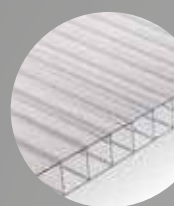


Smart.Solar.Box

Goodbye glass Lexan is here!

NO MORE GLASS, the panel is made of **LEXAN™ THERMOCLEAR™**, an exclusive polymer that combines high mechanical, optical, and thermal properties. EGO Smart.Solar.Box weighs 40% less, has minimal heat dispersion, eliminates the condensation effect, and resists bad weather. **When they say "less is more"!**

The exclusive frame design (available in 2 colours) makes the system very similar to a mansard window for perfect architectural integration.



Lexan* Tough
Film and Sheet Virtually
Unbreakable

LEXAN™ THERMOCLEAR™
GARANTITO 10 ANNI CONTRO L'INGIALLIMENTO!
(BREVETTATO)

1 **LEXAN™ THERMOCLEAR™** ALVEOLAR POLYCARBONATE

- **UNBREAKABLE:** it has nothing to fear from the weather. It is 250 times more resistant than glass!
- **TRANSPARENCY:** exceptional ability to conduct solar radiation, guaranteed not to yellow for 10 years.
- **LIGHTNESS:** 80% lighter than glass.
- **PERFORMING:** strong reduction of heat dispersion during the night.
- **DOUBLE UV PROTECTION PATENTED SURFACE TREATMENT ON BOTH SIDES TO PROTECT** against the damaging effects of ultraviolet rays.

Why are all solar systems so heavy?

The solar systems currently available on the market are heavy to transport, even when empty. **EGO Smart.Solar.Box** is easier and quicker to install and, since it is lighter, it can be installed with less worries; **the 105 litre model only weighs 36 kg!**

Many installers choose EGO for the ease of movement on roofs.

2 **PVC STRUCTURE**

- Special resins and polymers resistant to impacts and UV RAYS, AVAILABLE IN 2 COLOURS.
- "Lighter" transport and installation.

100% RECYCLABLE



EGO. Solar is getting SMART!

We used the most innovative materials available on the market and the most intelligent technical solutions. **So, EGO Smart.Solar.Box is lighter, more efficient and better insulated, more resistant, easier to install and inspect, and 100% recyclable.**



Fantastic, from every point of view!

3 THE FRAME

The easily removable frame makes its design suitable for any architectural context while, at the same time, allowing quick installation and easy maintenance.

4 SUPPORT BRACKETS

Light and elegant in 100% recyclable material, they make installation easy and facilitate transport (Available in the standard BASIC version and the optional DELIGHT version).

The most reliable, even with harsh water.

Most tankless solar water heating systems suffer from various problems such as low resistance to corrosion from particularly harsh water or pressure resistance problems.

5 DHW accumulator, resistant to corrosion.

The domestic water accumulator is made using an innovative stainless steel alloy capable of resisting corrosion from even the harshest water.

6 COVER.

Made of a special multi-polymer material enriched with fiberglass and completely recyclable, a patented design ensures extreme mechanical strength and heat resistance.

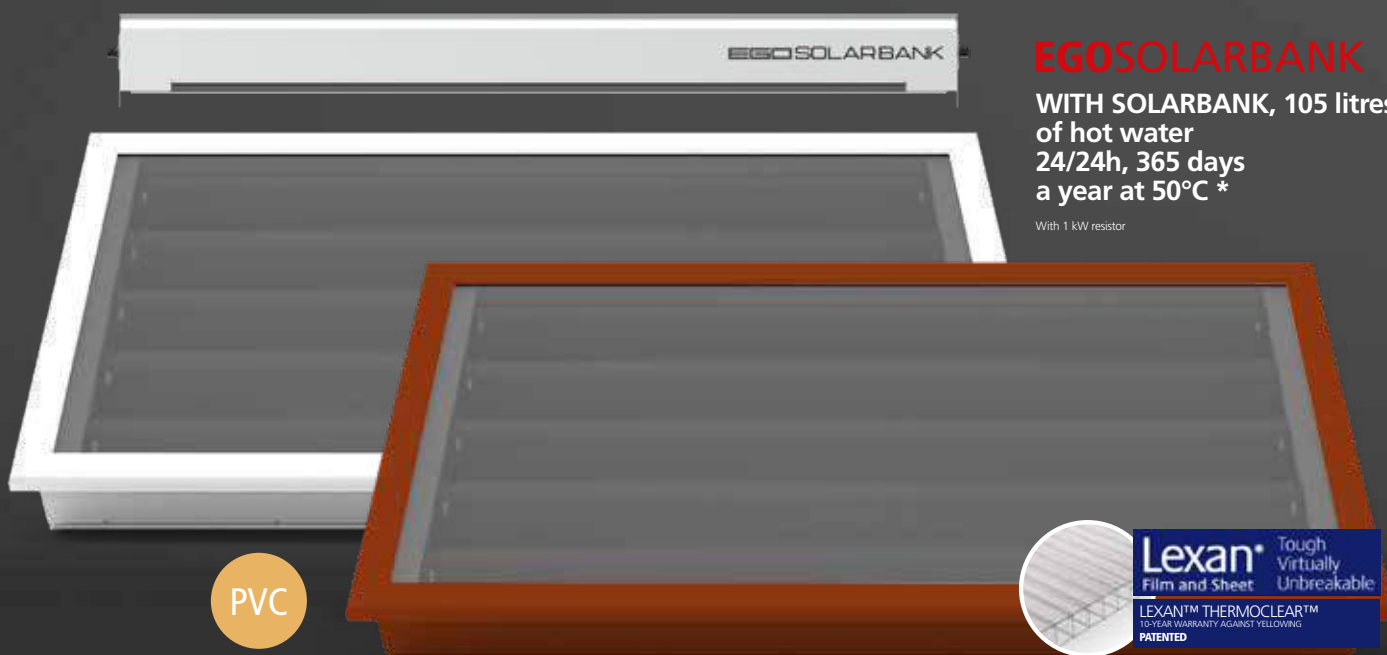
100% MADE IN ITALY

TANKLESS SOLAR THERMAL WATER HEATERS EGO

PLEION INNOVATION

EGO

**100% RECYCLABLE
INNOVATIVE CONCEPT AND MATERIALS
UNIQUE DESIGN**



EGOSOLARBANK

WITH SOLARBANK, 105 litres
of hot water
24/24h, 365 days
a year at 50°C *

With 1 kW resistor

**THE MOST INNOVATIVE
TANKLESS SOLAR WATER HEATING SYSTEM**

THE ONLY ONE IN 2 COLOURS AND 5 SIZES

DESIGNED AND PRODUCED IN ITALY

EGO Smart.Solar.Box

was developed in collaboration with the most
prestigious Research Institutes and Entities



UNIVERSITY
OF TRENTO - Italy



**ACTIVATE THE
WARRANTY
ONLINE!**

**5
YEAR
WARRANTY**

EGO. In resistant plastic. Solar thermal becomes EASY FOR EVERYONE

EGO

It is the new tankless solar water heater system, compact and **ALL-IN-ONE**: the boiler built into the thickness of the panel ensures a clean and pleasant appearance.

Special steel tubes contain the necessary domestic water (depending on the size chosen), which is heated quickly by the sun and input into your system. That's it. Nothing could be easier. But the exclusive technology used is one of the most advances, as are the materials chosen for the building components.

THE FRAME The easily removable frame makes its design suitable for any architectural context while, at the same time, allowing quick installation and easy maintenance.

DOMESTIC WATER ACCUMULATOR The domestic water accumulator is made of a new alloy capable of resisting the harshest water.

EGO is 40% lighter Thanks to the combination of new materials, it is easier and quicker to install and, since it is lighter, it can be installed with less worries; **the 110 litre model only weighs 36 kg!**

THE SUPPORT BRACKETS INCLUDED are light and elegant, making installation easier for pitched roofs as well as terraces or flat roofs.

PLUS

- **HOT WATER FOR ALL SEASONS*** EVEN WITH LOW SOLAR RADIATION.

* Even in frigid temperatures with option resistor.

- **READY-TO-USE SOLAR SYSTEM**, all in one box! It installs in just a few minutes.
- **5 YEAR** warranty, with compliant installation and use.
- Resistant to even the harshest water.

The new **LEXAN®** panel considerably reduces heat dispersion compared to the traditional glass, eliminates the condensation effect, and increases resistance to bad weather.

An essential design in 2 fantastic colours.

EGO LUNAR WHITE						
LITRES	AREA m ²	PERS.	WEIGHT* Kg	DIMENSIONS L x W x H mm	MODEL	COD.
110	1.52	↑ 1-2	36	2136x711x220	EGO 110	1020001100
150	1.93	↑ 2-3	43	2136x906x220	EGO 150	1020001500
180	2.35	↑ 3-4	50	2136x1101x220	EGO 180	1020001800
220	2.77	↑ 4-5	57	2136x1296x220	EGO 220	1020002200
260	3.18	↑ 5-6	64	2136x1491x220	EGO 260	1020002600

EGO TERRACOTTA RED						
LITRES	AREA m ²	PERS.	WEIGHT* Kg	DIMENSIONS L x W x H mm	MODEL	COD.
110	1.52	↑ 1-2	36	2136x711x220	EGO 110-R	1020001101
150	1.93	↑ 2-3	43	2136x906x220	EGO 150-R	1020001501
180	2.35	↑ 3-4	50	2136x1101x220	EGO 180-R	1020001801
220	2.77	↑ 4-5	57	2136x1296x220	EGO 220-R	1020002201
260	3.18	↑ 5-6	64	2136x1491x220	EGO 260-R	1020002601

BRACKETS INCLUDED



**WORLD
LAUNCH**
PATENTED

TANKLESS SOLAR THERMAL WATER HEATERS EGO PRIME

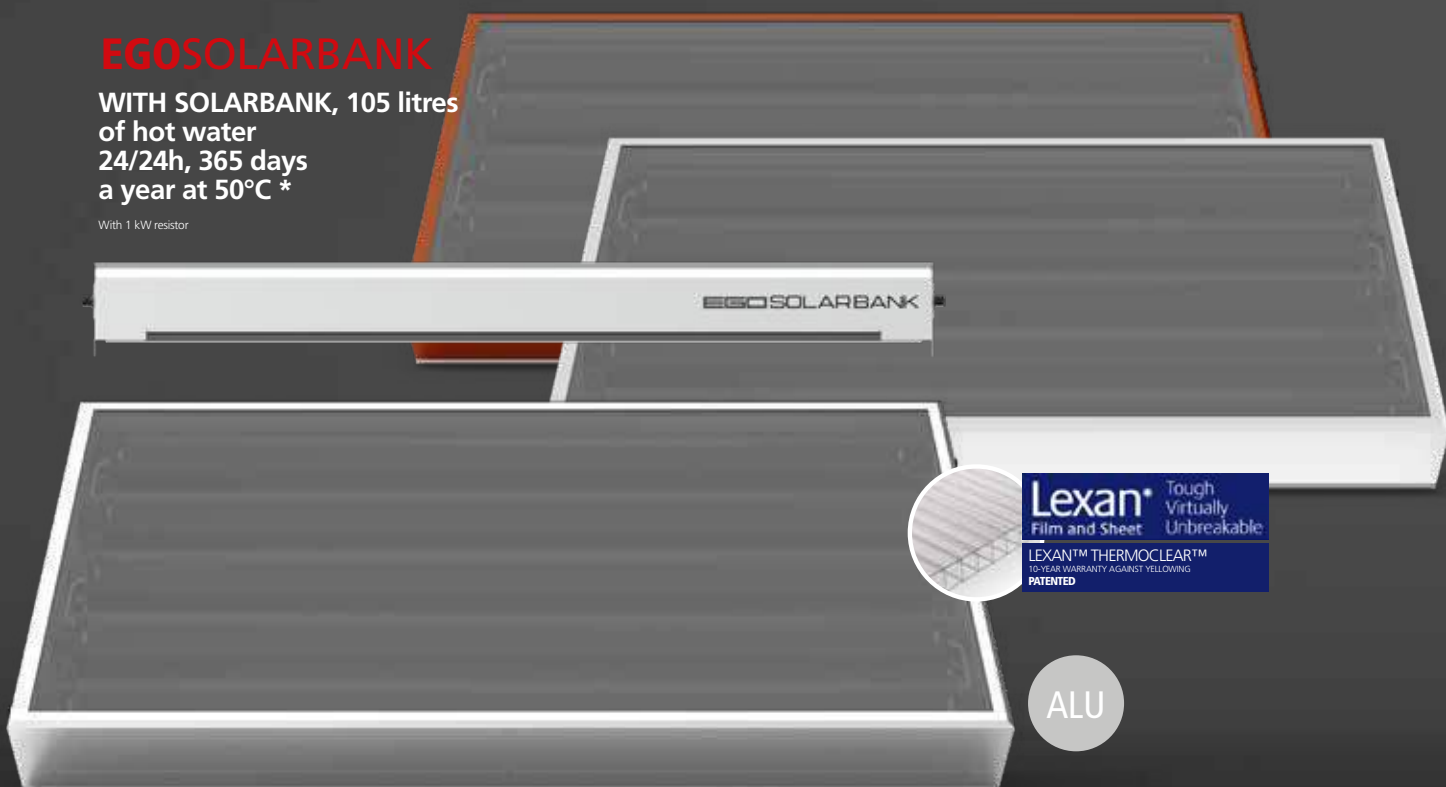
PLEION INNOVATION

EGO P R I M E

COLOURS

EGOSOLARBANK

WITH SOLARBANK, 105 litres
of hot water
24/24h, 365 days
a year at 50°C *

With 1 kW resistor

THE MOST INNOVATIVE TANKLESS SOLAR WATER HEATING SYSTEM

THE ONLY ONE IN 3 COLOURS AND 5 SIZES


DESIGNED AND PRODUCED IN ITALY**EGO Smart.Solar.Box**

was developed in collaboration with the most
prestigious Research Institutes and Entities



UNIVERSITY
OF TRENTO - Italy



ACTIVATE THE
WARRANTY
ONLINE!

5
YEAR
WARRANTY

All-in-one, innovative, convenient, unique accumu- lator and collector: simply revolutionary!

EGO PRIME

It is the new tankless solar water heater system, compact and **ALL-IN-ONE**: the boiler built into the thickness of the panel ensures a clean and pleasant appearance.

Special steel tubes contain the necessary domestic water (depending on the size chosen), which is heated quickly by the sun and input into your system. That's it. Nothing could be easier. But the exclusive technology used is one of the most advances, as are the materials chosen for the building components.

DOMESTIC WATER ACCUMULATOR The domestic water accumulator is made of a new alloy capable of resisting the harshest water.

EGO is 40% lighter Thanks to the combination of new materials, it is easier and quicker to install and, since it is lighter, it can be installed with less worries; **the 110 litre model only weighs 29 kg!**

THE SUPPORT BRACKETS INCLUDED are light and elegant, making installation easier for pitched roofs as well as terraces or flat roofs.

PLUS

- **HOT WATER FOR ALL SEASONS*** ALSO WITH LOW SOLAR RADIATION.

* Even in frigid temperatures with option resistor.

- **READY-TO-USE SOLAR SYSTEM**, all in one box! It installs in just a few minutes.
- **5 YEAR warranty**, with compliant installation and use.
- Resistant to even the harshest water.

The new **LEXAN®** panel considerably reduces heat dispersion compared to the traditional glass, eliminates the condensation effect, and increases resistance to bad weather.

An essential design in 3 fantastic colours.

EGO PRIME ALUMINIUM

LITRES	AREA m²	PERS.	WEIGHT* Kg	DIMENSIONS L x W x H mm	MODEL	COD.
110	1.28	↑ 1-2	29	2055x620x213	EGO PRIME 110	1030001100
150	1.68	↑ 2-3	36	2055x815x213	EGO PRIME 150	1030001500
180	2.08	↑ 3-4	43	2055x1010x213	EGO PRIME 180	1030001800
220	2.48	↑ 4-5	50	2055x1205x213	EGO PRIME 220	1030002200
260	2.88	↑ 5-6	58	2055x1400x213	EGO PRIME 260	1030002600

EGO PRIME BIANCO

LITRES	AREA m²	PERS.	WEIGHT* Kg	DIMENSIONS L x W x H mm	MODEL	COD.
110	1.28	↑ 1-2	29	2055x620x213	EGO PRIME 110-B	1030001101
150	1.68	↑ 2-3	36	2055x815x213	EGO PRIME 150-B	1030001511
180	2.08	↑ 3-4	43	2055x1010x213	EGO PRIME 180-B	1030001811
220	2.48	↑ 4-5	50	2055x1205x213	EGO PRIME 220-B	1030002211
260	2.88	↑ 5-6	58	2055x1400x213	EGO PRIME 260-B	1030002601

EGO PRIME RED

LITRES	AREA m²	PERS.	WEIGHT* Kg	DIMENSIONS L x W x H mm	MODEL	COD.
110	1.28	↑ 1-2	29	2055x620x213	EGO PRIME 110-R	1030001102
150	1.68	↑ 2-3	36	2055x815x213	EGO PRIME 150-R	1030001512
180	2.08	↑ 3-4	43	2055x1010x213	EGO PRIME 180-R	1030001812
220	2.48	↑ 4-5	50	2055x1205x213	EGO PRIME 220-R	1030002212
260	2.88	↑ 5-6	58	2055x1400x213	EGO PRIME 260-R	1030002602

BRACKETS INCLUDED



TANKLESS SOLAR WATER HEATING SYSTEMS

EGO AND EGO PRIME

PLEION INNOVATION

DESIGNED AND PRODUCED IN ITALY



EGO

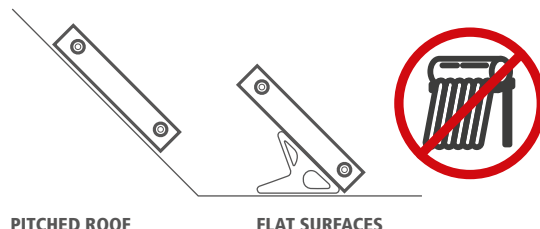
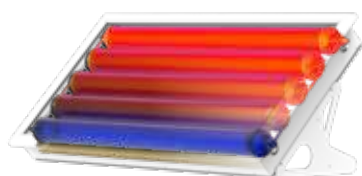
P R I M E

Sturdy and light with aluminium structure, available in 3 colours.



EGO

In resistant plastic, innovative and revolutionary, available in 2 colours.



PITCHED ROOF

FLAT SURFACES

EFFICIENT AND RESISTANT HYDRAULICS.

ACCUMULATOR insulated with an innovative stainless steel alloy resistant to corrosion from even the harshest water. **COVERS** built of special plastic material enriched with fibreglass and completely recyclable and resistant to pressure.

INDESTRUCTIBLE FRONT PANEL

The first in the world with the Lexan® Thermoclear® polycarbonate panel:

- **UNBREAKABLE:** 250 times more resistant than glass.
- **LIGHTNESS:** 80% lighter than glass.
- **TRANSPARENCY:** exceptional ability to conduct solar radiation.
- **PERFORMING:** strong reduction of heat dispersion during the night.
- **DOUBLE UV PROTECTION.**

EASY TO INSTALL, ANYWHERE. ALL-IN-ONE

Unlike the classic "tanks" EGO and EGO PRIME can be installed anywhere with perfect architectural integration.

With the double bracket (included) you can install it wherever you want.




















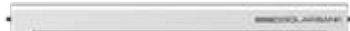
LAUNCH EGO SOLARBANK

TURBOCHARGE YOUR EGO! HOT WATER 24/7!

Always efficient with hot water always available, even at dawn, thanks to an optional insulated tube that can be applied to any EGO and EGO PRIME (even those already installed).

- **Single-pipe hydraulics with an additional 35 litres of hot water protected by high-density foam insulation.**



MODELS										
	EGO	EGO PRIME	EGO	EGO PRIME	EGO	EGO PRIME	EGO	EGO PRIME	EGO	EGO PRIME
	110	110	150	150	180	180	220	220	260	260
	110-R	110-R	150-R	150-R	180-R	180-R	220-R	220-R	260-B	260-R
Total system area	1.52 m ²	1.28 m ²	1.93 m ²	1.68 m ²	2.35 m ²	2.08 m ²	2.77 m ²	2.48 m ²	3.18 m ²	2.88 m ²
Dimensions L x W x H	2136x711x220	2,055x620x213	2136x906x220	2,055x815x213	2136x1101x220	2,055x1010x213	2136x1296x220	2,055 x 1,205 x 213 mm	2136x1491x220	2,055 x 1,400 x 213 mm
		1-2		2-3		3-4		4-5		5-6
Weight (empty, excluding bracket)	36 kg	29 kg	43 kg	36 kg	50 kg	43 kg	57 kg	50 kg	64 kg	58 kg
Capacity	105 liters		140 liters		175 liters		210 liters		245 liters	
Insulation	25 mm POLYESTER fiber and 30 mm rigid PUR sheet - POLYESTER fiber									
Hydraulic connections	2 x 3/4" M									
Installation	Flat roof - Pitched roof									
COLOUR STANDARD	EGO  LUNAR WHITE  TERRACOTTA RED EGO PRIME  ALUMINIUM  WHITE  RED									
Warranty	5 YEARS									
SOLAR BANK										

AN ESSENTIAL DESIGN AND FANTASTIC COLOURS.

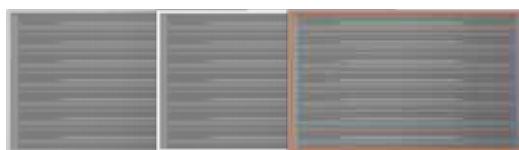
EGO is the first and only system available in 2 magnificent colours to make it integrate perfectly in the environment in which it will be installed. EGO PRIME "COLOURS" is available in 3 colours, Aluminium, White, and Red.

Standard



 PVC LUNAR WHITE
  PVC TERRACOTTA RED

PRIME



 ALUMINIUM
  WHITE
  RED

LOTS OF ACCESSORIES

EGO Smart.Solar.Box already has everything, but it also offers a series of accessories and options to increase its performance and customise its design for your world and your personality.

STANDARD



VALVES

- Air ventilation valves
- Safety valve

STANDARD- included in the package (no EGO PRIME)



• Galvanised metal mounting bracket for installation on pitched roofs.

STANDARD- included in the package (no EGO PRIME)



BASIC SUPPORTS

- Galvanised metal mounting bracket for installation on flat roofs.

STANDARD- included in the package (no EGO PRIME)

Fasteners for mounting the supports (for both flat and pitched roofs) are not included.

ACCESSORIES

FOR EGO / EGO PRIME SOLAR COLLECTORS

EGO SOLAR BANK



Extend the power of your EGO, water always hot thanks to an optional 35-litre, insulated tube that can be applied to any EGO and EGO PRIME (even on those that are already installed).

DESCRIPTION	CODE
EGO SOLAR BANK (WHITE)	4400300080
EGO SOLAR BANK (ALUMINIUM)	4400300081

PRESSURE REDUCER (OPTIONAL)



Limits the inlet pressure, reducing the possibilities of the valve opening and thus a possible water leak. Calibration 3 bars.

DESCRIPTION	CODE
Pressure reducer	4400223303

MIXING VALVE (OPTIONAL)



Adjustable, high performance thermostatic mixer for domestic water systems, suitable for solar systems, with anti-scald safety. Complete with threaded couplings, 1" M valve with 1" F x 3/4" M couplings. Maximum operating pressure/temperature 10 bar/100°C.

DESCRIPTION	CODE
Thermostatic Mixing Valve 3/4" - 35/55° kvs=1.7	1030900002

THERMOSTATIC DEVIATOR-MIXER VALVE (OPTIONAL)



Valve made up of a single body in brass alloy and selector in plastic, one part a 48°C (+/-1°C) not adjustable thermostatic fixed-point diverter and a second part an 30-56°C (±1°C) adjustable thermostatic mixer with anti-scald safety.

DESCRIPTION	CODE
5-way Selector-Mixing valve	1030900991

ANTI-FREEZE RESISTOR (300 W) - (OPTIONAL)



The EGO solar collector can be used without limits except in ice-prone areas. If the outdoor temperature is less than 0°C, the collector must be emptied and covered. Alternatively, and, however, with outdoor temperatures of not below -5°C, the anti-freeze resistor may be installed.

DESCRIPTION	CODE
ANTI-FREEZE RESISTOR (300 W)	4400234100

RESISTORS FOR THERMAL INTEGRATION 1-2 KW - (OPTIONAL)



1 kW



2 kW

DESCRIPTION	CODE
RESISTORS FOR THERMAL INTEGRATION 1 kW	4400234101
RESISTORS FOR THERMAL INTEGRATION 2 kW	4400234102

AIR VENTILATION VALVE (INCLUDED)



Standard and included in every EGO package

DESCRIPTION	CODE
Air ventilation valve	4400225711

SAFETY AND CHECK VALVE (STANDARD)



Standard and included in every EGO package

DESCRIPTION	CODE
Safety valve	4400226101

KOPERNIKO

ENERGY MODULE

THE 1ST SPACE-SAVING ENERGY MODULE

The new **KOPERNIKO** accumulator system is the revolutionary energy module that can be flush or wall mounted.

- **Production of hot water**
Instantaneous 20 l/min
free of the risk
of Legionella
- **Compact design**
- **Optimal layering**
- **200 litre accumulator
in only 235 mm**



PATENTED DESIGN

The KOPERNIKO system is covered by 2 industrial patents.



MADE IN ITALY

Designed and produced in Italy



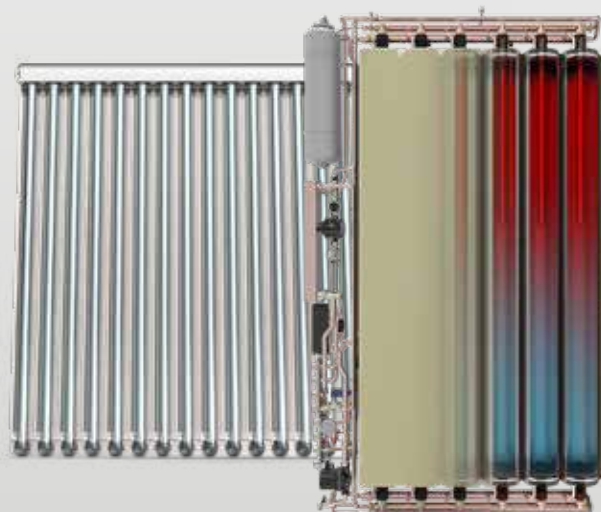
ANTI-LEGIONELLA SYSTEM



KOPERNIKO S PERFECT INTEGRATION WITH SOLAR COLLECTORS

KOPERNIKO S includes a plate solar exchanger with circulator, sized up to 5.5 m² of solar surface expansion vessel and solar station to be installed externally).

KOPERNIKO S is perfect for combining with the range of X-RAY R evacuated solar collectors (higher performance during the winter months).



LAUNCH WORLD 2022

PATENTED

4

2

6

1 FRAME

Sturdy insulated galvanised steel box ready for attachment of the hydraulic components

2 COMPLETE THERMAL INSULATION

The insulating casings are made with special insulation that minimises thermal dispersion.

3 HYDRAULIC CONNECTIONS

The side template facilitates all the hydraulic connections.
The KOPERNIKO S model is made with a solar exchanger and a secondary exchanger for the operation of the solar panels.

4 TECHNICAL WATER ACCUMULATOR

The accumulator is made of a series of circular tanks in 316L stainless steel, connected in parallel through the collectors designed to ensure excellent layering of the accumulator tank and a perfect extraction, without creating mixing phenomena inside.

5 DHW MODULE

Plate module for DHW production with a primary exchanger and thermostatic regulation valve.

6 FACILITATED ACCESSIBILITY

4 maintenance hatches

ERP CLASS

C

KOPERNIKO ENERGY MODULE

KOPERNIKO

ENERGY MODULE



SPACE-SAVING
MODULE

DHW
20 L/MIN

2022
WORLD
LAUNCH

PATENTED

 **ANTI-LEGIONELLA
SYSTEM**

WARRANTY

GUARANTEED FOR
5
YEARS

USE



The first space-saving energy module for the combined production of DHW and integration in the heating system.

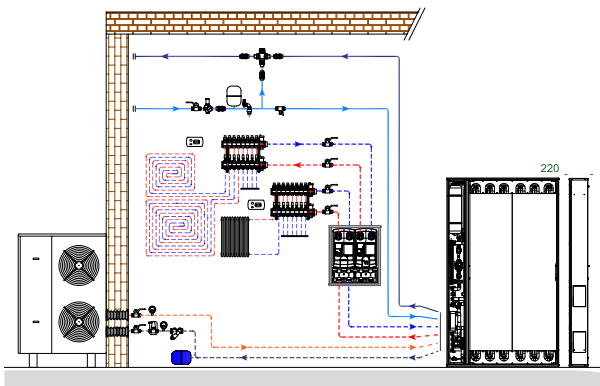
KOPERNIKO - KOPERNIKO consists of a 200 litre flush mount accumulator that can be positioned in areas that do not allow the installation of standard cylindrical accumulators. The KOPERNIKO accumulator system is designed for the combined production of domestic hot water and integration in the heating system. The accumulator is made of a series of circular tanks with a small diameter positioned vertically and interconnected through a complex system of collectors that allow balanced loading and subsequent extraction of energy. The tank is designed to contain technical water. Designed to be combined with traditional heating systems or renewable systems.

The system also has a series of plate modules for DHW production specifically for combined integration with a heat pump and solar thermal collectors. The plate module for the production of domestic hot water has a wide exchanger surface complete with the necessary components such as the primary exchanger and thermostatic regulation valve. The accumulator is insulated with expanded polypropylene, which can be removed to perform maintenance.

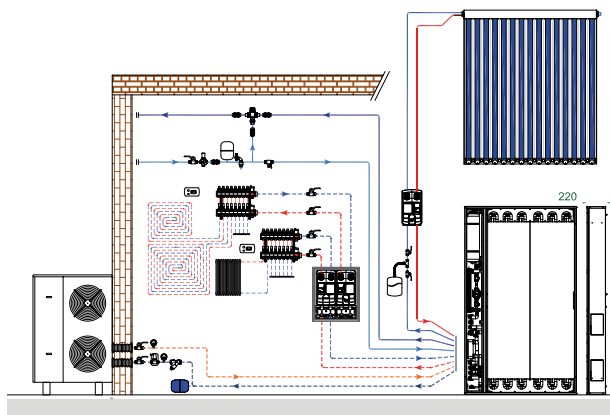
As an option, the KOPERNIKO S version may have, in the inside base, the dedicated exchanger for making maximum use of the thermal integration of the solar collectors.

The primary characteristics are its shape and dimensions. In fact, due to its small size, especially the thickness, it can be flush mounted on walls or in locations where the amount of space is limited. KOPERNIKO can be implemented in existing buildings or new construction.

INTEGRATION WITH THE HEAT PUMP SYSTEM



INTEGRATION WITH THE HEAT PUMP SYSTEM + SOLAR COLLECTORS



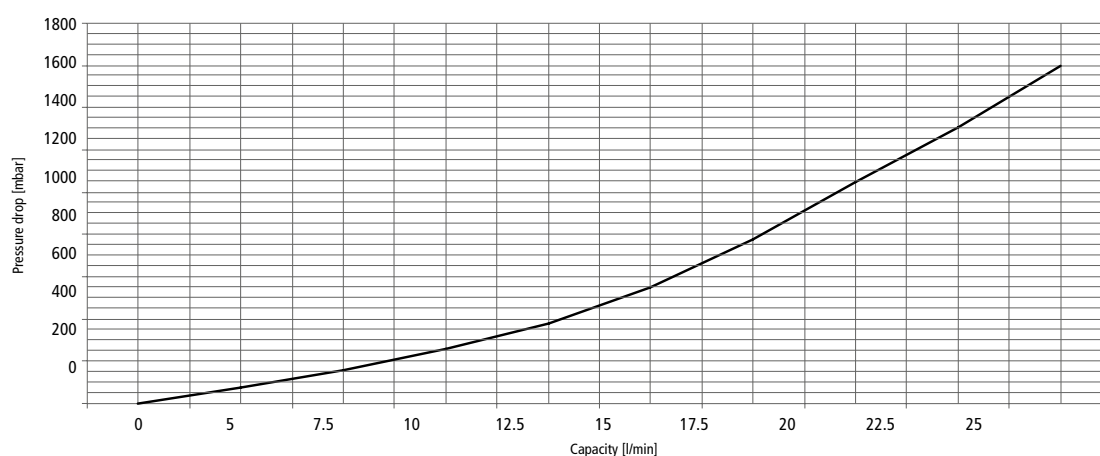
	KOPERNIKO	KOPERNIKO S*
Energy efficiency class	C	C
CODE	3010802001	3010802011

* ready for solar integration

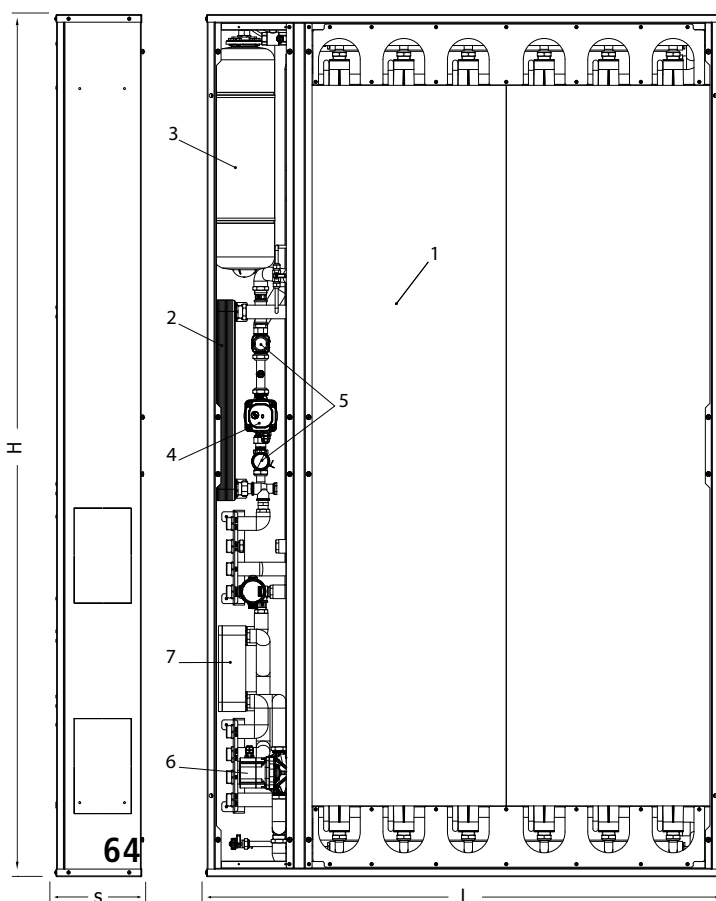
KOPERNIKO/KOPERNIKO S

ERP	UoM	KOPERNIKO	KOPERNIKO S
Active storage capacity	[l]	210	210
Standing losses	[W]	78	78
Heat loss	[kWh/24h]	1.872	1.872
Energy efficiency class	[-]	C	C
PRESSURES	UoM		
MAX Domestic water exchanger	[bar]	10	10
MAX Solar exchanger	[bar]	-	10
MAX Accumulator	[bar]	3	3
TEMPERATURE	UoM		
MAX Domestic water exchanger	[°C]	95	95
MAX Solar exchanger	[°C]	-	120
MAX Accumulator	[°C]	95	95

Pressure Drops of Domestic Water Exchanger



The KOPERNIKO S version includes a plate solar exchanger and solar circulator sized for solar collectors up to 5.5 m². Solar expansion vessel to be installed externally.



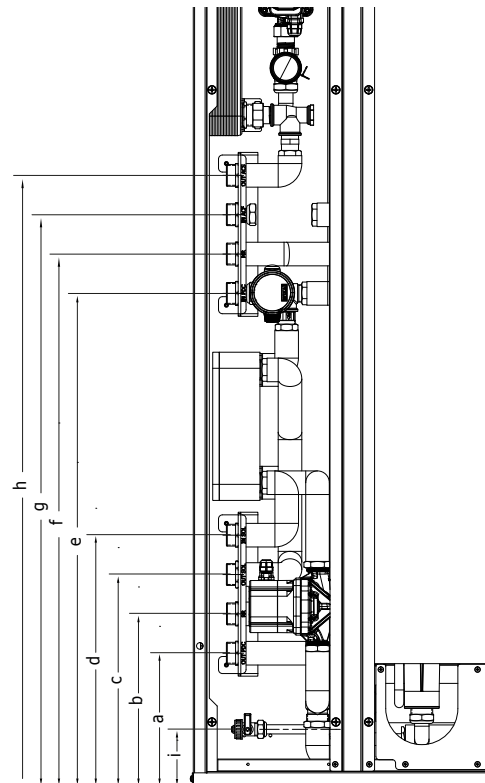
MEASUREMENTS	UoM	KOPERNIKO
H - total height	[mm]	2270
W - Total width	[mm]	1350
T - Thickness	[mm]	225
Empty weight	[Kg]	100
COMPONENTS	UoM	KOPERNIKO
1 - Technical water accumulator	[l]	210
2 - Instantaneous domestic water exchanger	[l/m]	20
3 - Accumulator expansion vessel (18 litres)	[l]	12
4 - Primary DHW exchanger controlled by flow switch		
5 - DHW temperature regulation system with 3-way valve and thermostatic valve		
6* - Accumulator side exchanger for solar		
7* - Solar plate exchanger		

* KOPERNIKO S optional equipment

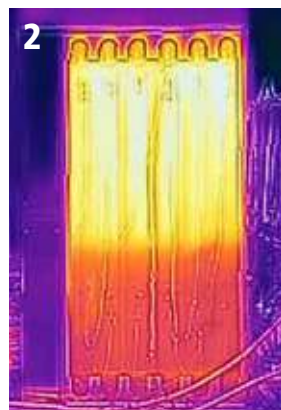
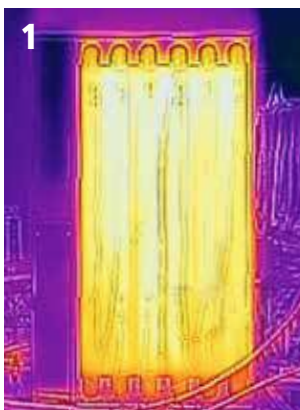
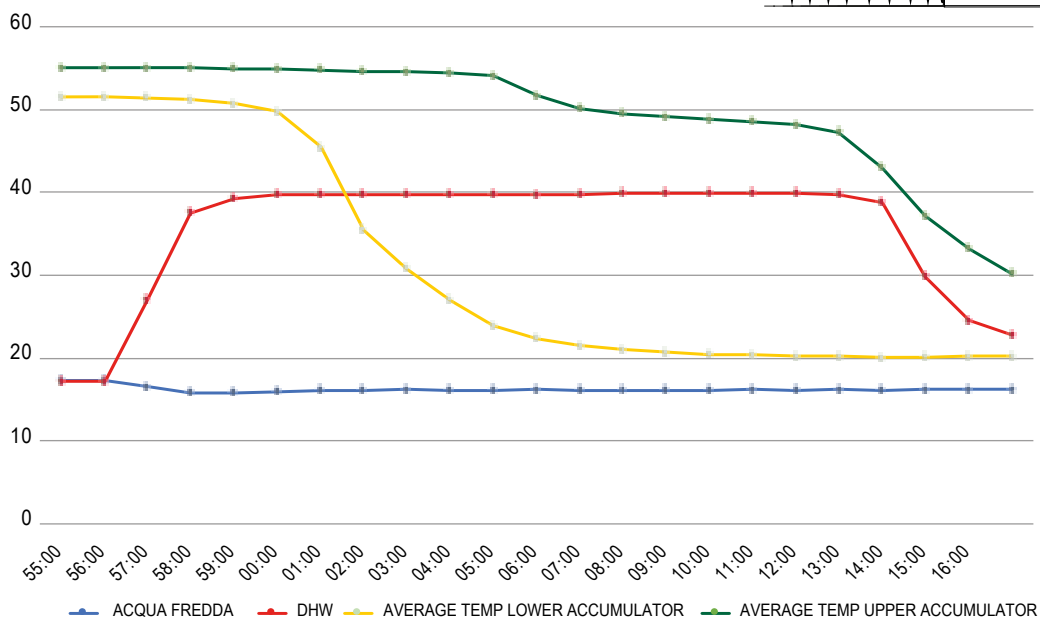
CONNECTION DETAIL

CONNECTIONS	UoM	KOPERNIKO	
a - Coupling for generator return (heat pump)	[mm]	200	1" IG
b - Coupling for heating system return	[mm]	260	1" IG
c - Coupling for solar system return*	[mm]	320	1" IG
d - Coupling for solar system outlet*	[mm]	380	1" IG
e - Coupling for generator outlet (heat pump)	[mm]	750	1" IG
f - Coupling for heating system outlet	[mm]	810	1" IG
g - Coupling for DCW domestic cold water inlet	[mm]	870	1" IG
h - Coupling for DHW domestic hot water outlet	[mm]	930	1" IG
i - Drain tap	[mm]	80	3/4" IG

* KOPERNIKO S optional equipment



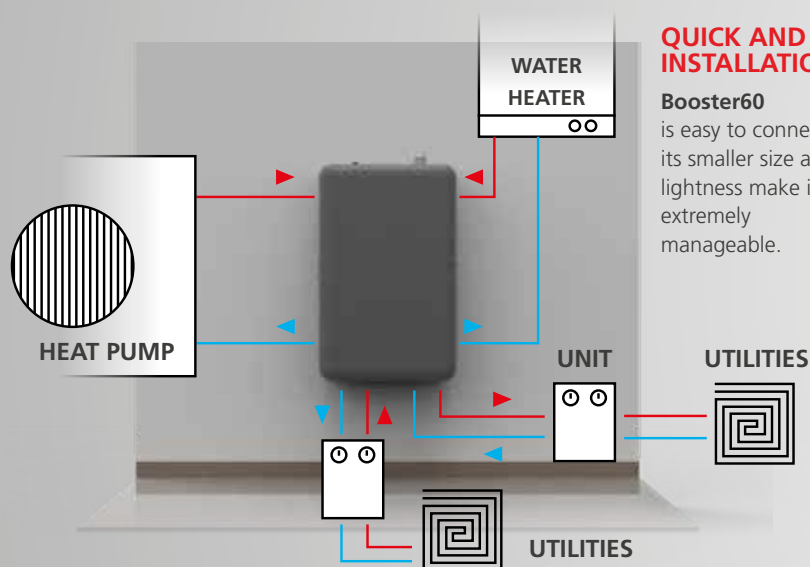
EXTRACTION AND LAYERING PERFORMANCE



BOOSTER60

THE THERMAL INERTIAL WALL FLYWHEEL THAT TURBOCHARGES YOUR **HEAT PUMP**

The ultra compact Booster60 is installed in series between the heat pump and the heating/cooling distribution system. It optimises the operation of the heat pump, improving its efficiency, and decreasing the number of ignition cycles, thus prolonging its useful life.



QUICK AND FLEXIBLE INSTALLATION

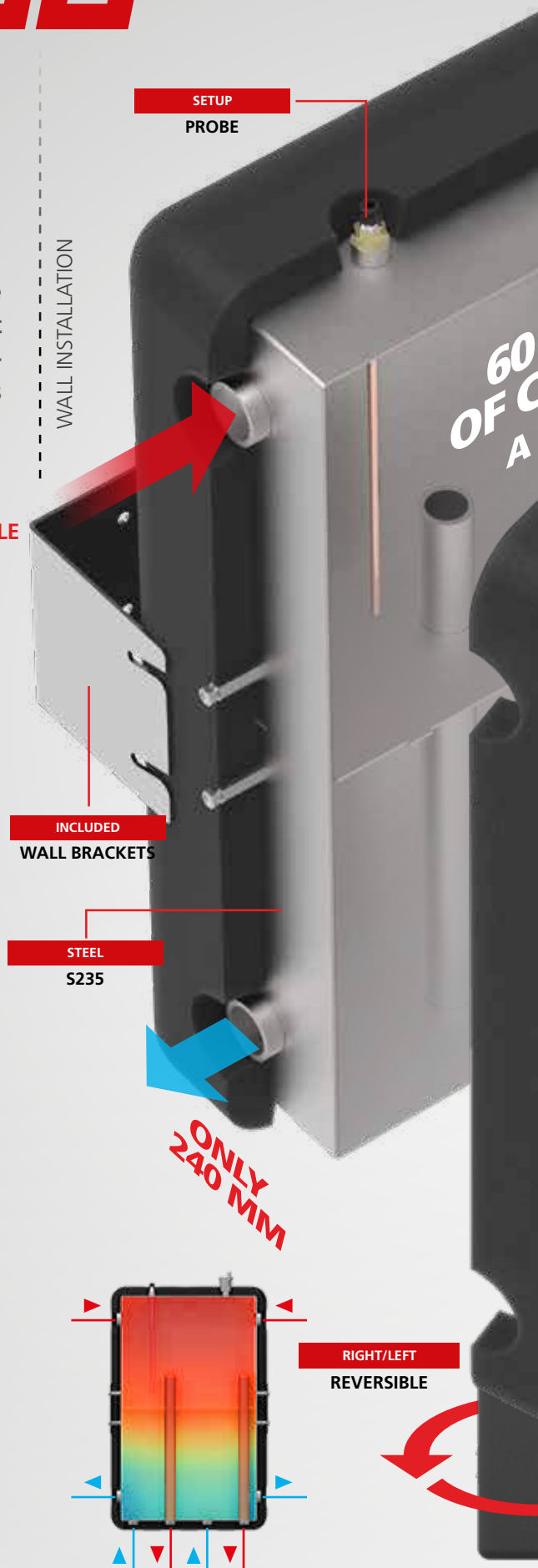
Booster60 is easy to connect; its smaller size and lightness make it extremely manageable.

YOUR HEAT PUMP LASTS LONGER WITH BOOSTER!

Booster60 optimises the operation of the heat pump, minimising the ON/OFF cycles. **Booster60** allows the heat pump to work for long enough time intervals to reduce the number of on/off cycles. In the same way, the thermal energy accumulated in the tank temporarily suppresses requests from the distribution system while the machine is not working.

GUARANTEES THE HYDRAULIC SEPARATION OF THE FLOWS BETWEEN THE HEAT PUMP AND DISTRIBUTION SYSTEM

Booster60 allows the heat pump-side circuit and the system-side circuit to be made independent of each other, optimising the work of the circulation pumps and thus allowing the heat pump to work efficiently. **Its interior design was studied to perform the functions of hydraulic separator and distribution manifold for 2 system zones.**



INCLUDED
VENTING VALVE

2021 WORLD LAUNCH

DEFROSTING IN THE AIR/WATER HEAT PUMP WITHOUT DECREASING THE COMFORT INSIDE THE BUILDING

Booster60 can be used in both heating and cooling systems. In the latter case, installation of the **Booster60** contributes to maintaining comfort (especially in the case of fan coil units) even during the defrosting cycles of evaporators in most air/water heat pumps.

AN EFFICIENCY BOOSTER!

The diameter of the input/output hydraulic couplings (max 4.5 m³/h) guarantees the retention of thermal layering in the accumulator. The position of the couplings is designed so the heat pump and distribution system operate with maximum efficiency along with the variations. The insulation of the **Booster60** minimises thermal dispersions and is also suitable for summer use, therefore during cooling (management of the condensation that forms on outer surfaces); the 60-litre volume is suitable for use in most domestic configurations.

SPACE-SAVING SOLUTION, QUICK AND EASY TO INSTALL

The SLIM DESIGN of **Booster60** allows it to be inserted in any system context. The wall mounting bracket and its 180° reversibility ensure greater installation flexibility and practicality.

LOTS OF ACCESSORIES

Automatic air venting valve and temperature probe holder fitting included.

ADVANTAGES

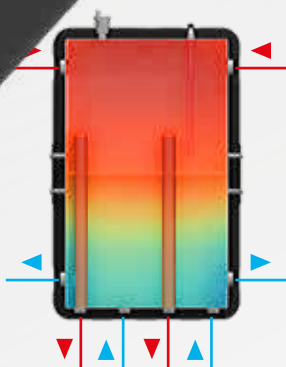
- Super compact 240x520x860 mm
- 60 litres of available capacity
- Completely insulated
- Suitable for hot/cold solutions (EPP λ 0.034 W/mk. 30g/l thickness 35 mm)
- Reduced load loss with capacity up to 4.5 m³/h
- Multipurpose: De-aerator + Hydraulic separator/distribution manifold (2 zones)
- Reversible installation (right/left)
- Probe holder fitting and automatic venting valve included
- Easy wall installation using the support brackets

LITRES
CAPACITY
4.5 M³/H



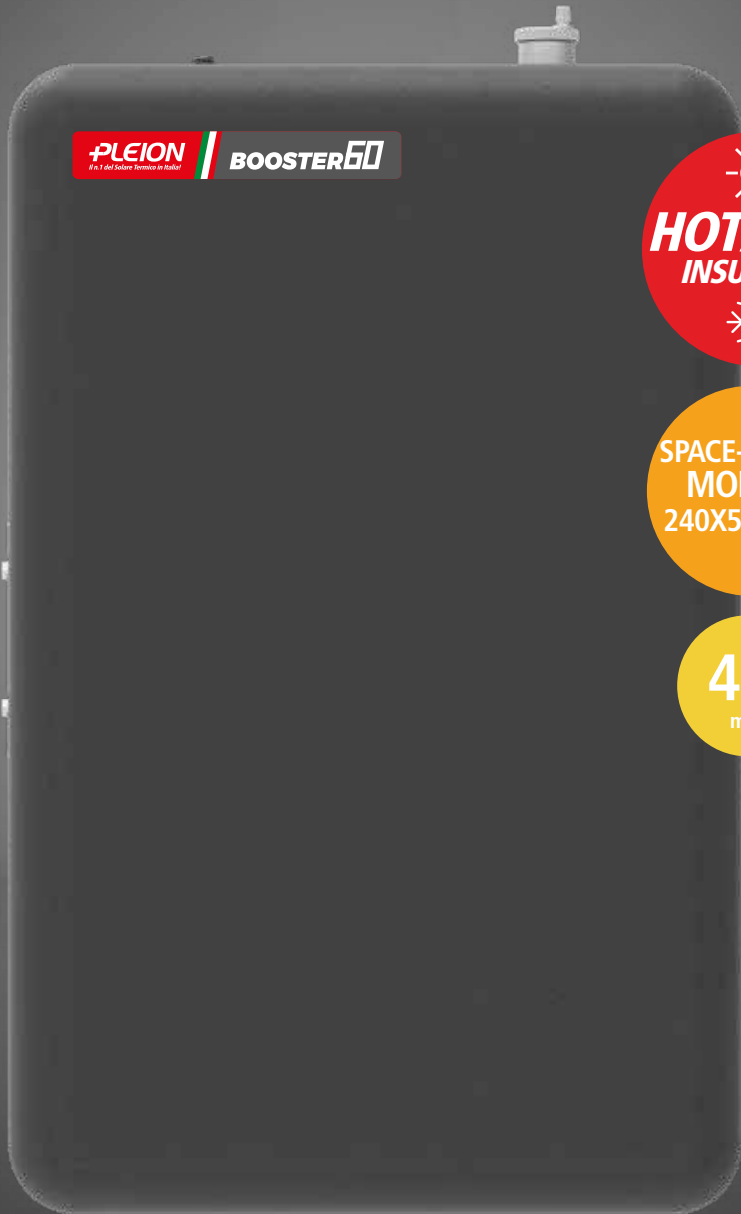
SPACE-SAVING
MODULE
240X520X860

4.5
m³/h



MINI THERMAL INERTIAL FLYWHEEL FOR HEAT PUMPS

BOOSTER60




HOT/COLD
INSULATED


**SPACE-SAVING
MODULE**
240X520X860

4.5
m³/h

2021
**WORLD
LAUNCH**

WARRANTY

GUARANTEED FOR
5
YEARS

USE



BOOSTER 60 is a new module that can perform the functions of a hydraulic separator and distribution manifold for 2 zones.

BOOSTER 60 - Booster60 is a thermal flywheel that plays an essential role inside a heat pump central heating plant. It is an ultra compact container to be installed in series between the heat pump and heating/cooling distribution system. Booster60 allows you to save the energy produced and reuse it later when the heating system is not in operation, obviously saving on the heating/cooling costs for the building.

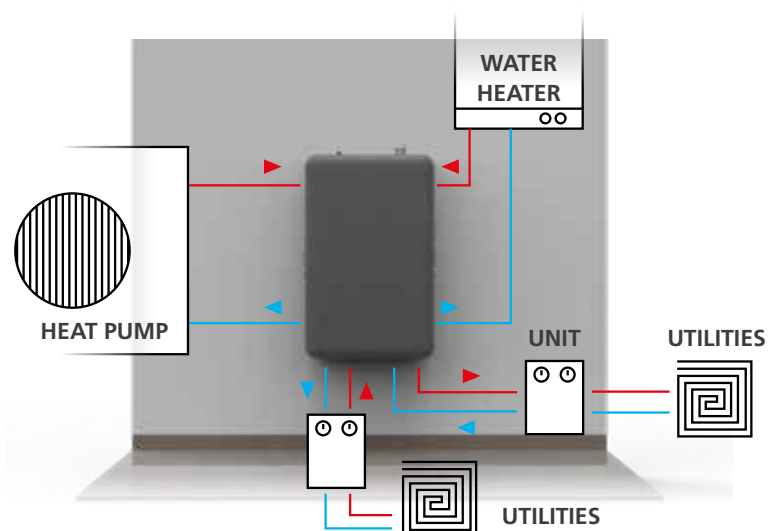
PROVIDES THERMAL INERTIA TO THE SYSTEM, INCREASE THE EFFICIENCY AND LIFE OF THE HEAT PUMP. A Heat Pump's life and performance are influenced by the number of on/off cycles. Booster60 optimises the heat pump's operation, minimising the ON/OFF cycles. Booster60 allows the Heat Pump to work for long enough time intervals to reduce the number of on/off cycles. In the same way, the accumulated thermal energy temporarily suppresses requests from the distribution system while the machine is not working. **GUARANTEES THE HYDRAULIC SEPARATION OF THE FLOWS BETWEEN THE HEAT PUMP AND DISTRIBUTION SYSTEM.** Booster60 allows the heat pump-side circuit and the system-side circuit to be made independent of each other, optimising the work of the circulation pumps and thus allowing the heat pump to work efficiently. Its interior design was studied to perform the functions of hydraulic separator and distribution manifold for 2 system zones. **ALLOWS THE DEFROSTING IN AIR/WATER HEAT PUMPS TO BE MANAGED WITHOUT DECREASING THE COMFORT INSIDE THE BUILDING.** Booster60 can be used in both heating and cooling systems. In the latter case, installation of the Booster60 prevents the danger of a decrease in comfort (especially in the case of fan coil units) even during the defrosting cycles of evaporators in most air/water heat pumps.

BENEFITS

- Less machine wear
- Thermal energy management optimised
- Operating cycles optimised
- Custom solution
- Reduction in compressor start-ups
- Heat pump operating at full capacity
- Improvement in plant performance

SPACE-SAVING SOLUTION

Super compact 240x520x860 mm
with wall installation

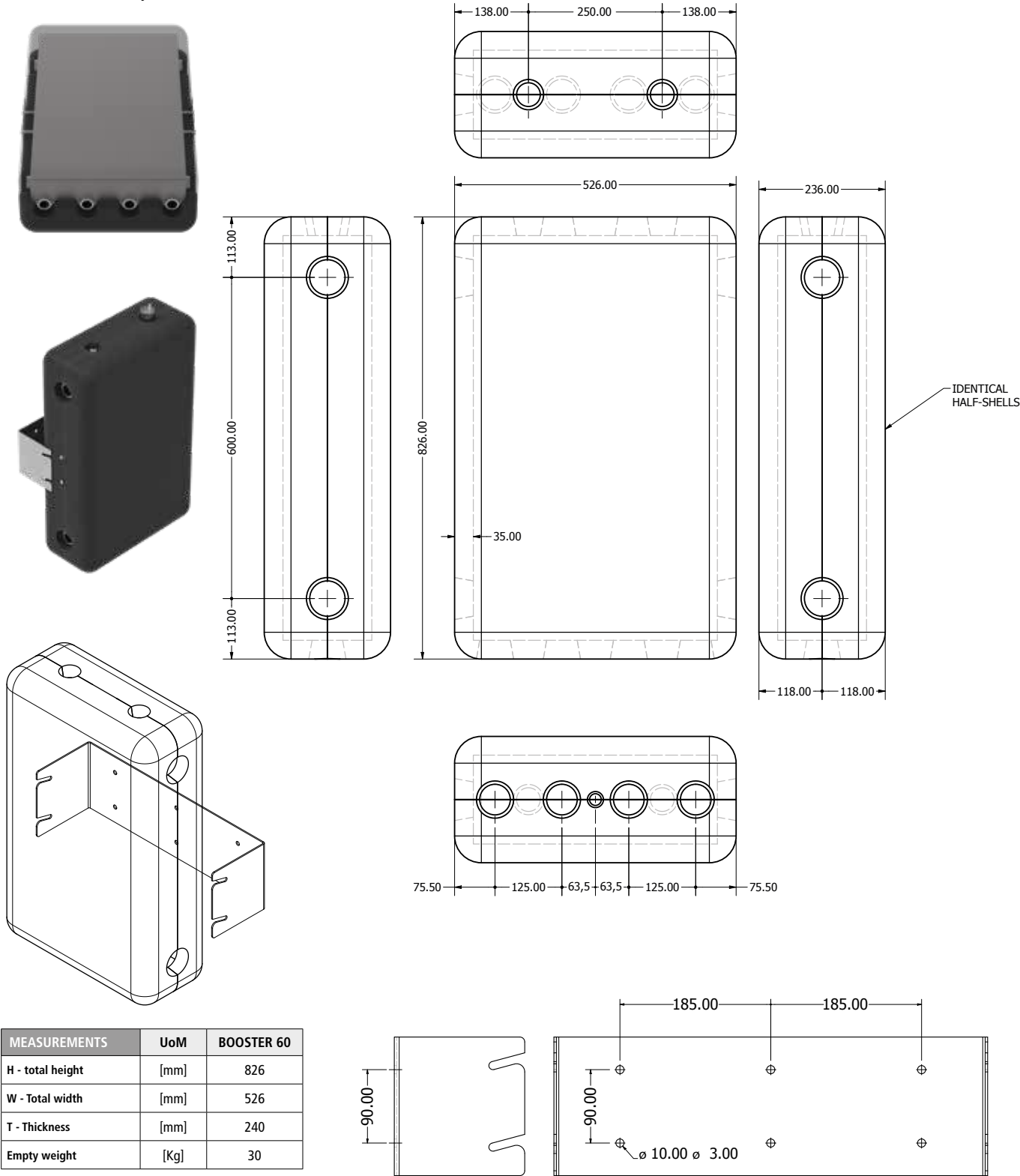


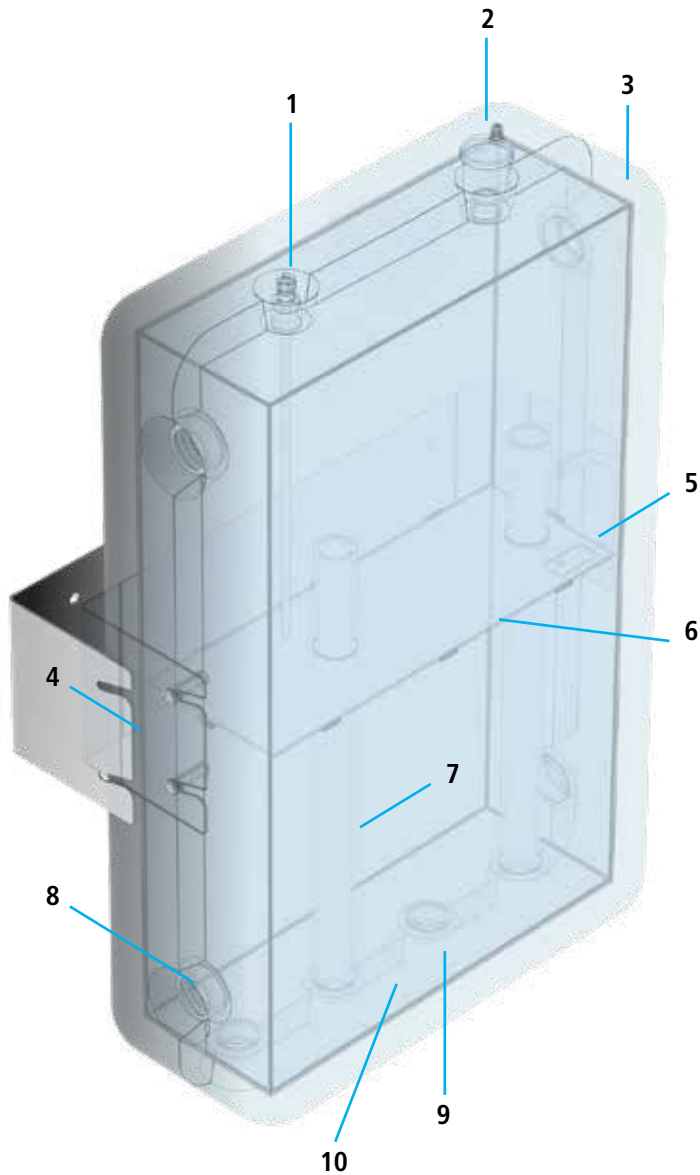
	BOOSTER 60	BOOSTER 60 - Pkg. 10Pc	BOOSTER 60 - Pkg. 20Pc
CODE	3010802002	3010802003	3010802004

BOOSTER 60

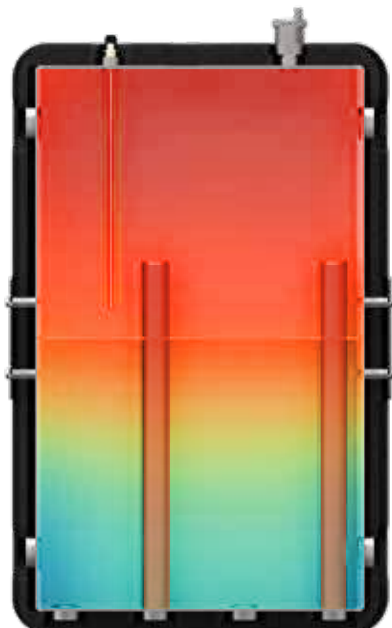
ERP	UoM	BOOSTER 60
Active storage capacity	[l]	60
PRESSURES		
Max operating pressure	[bar]	3
TEMPERATURE		
MAX Accumulator	[°C]	100 °C

4 1" couplings per booster
units for radiant system





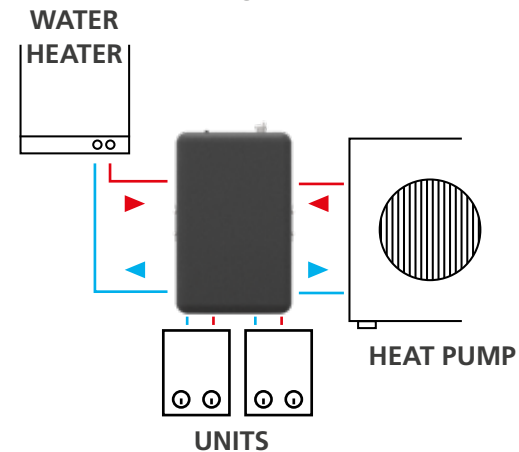
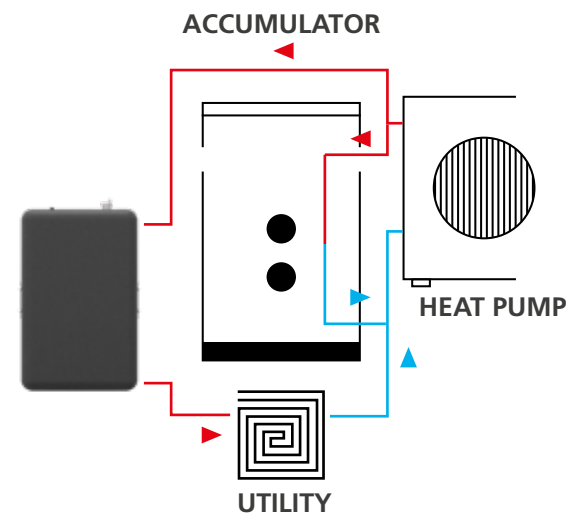
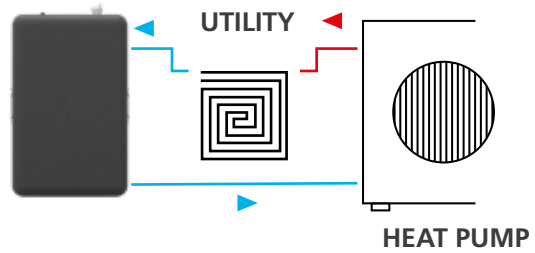
LAYERING

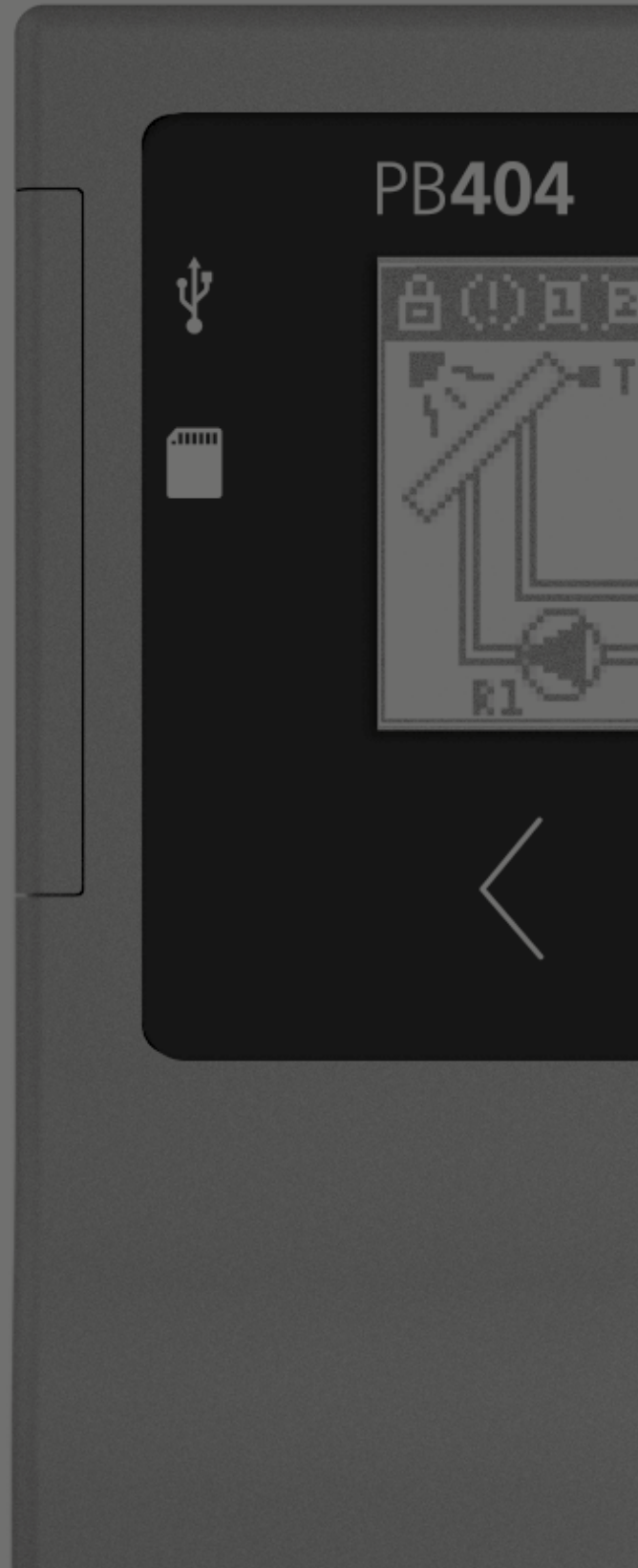


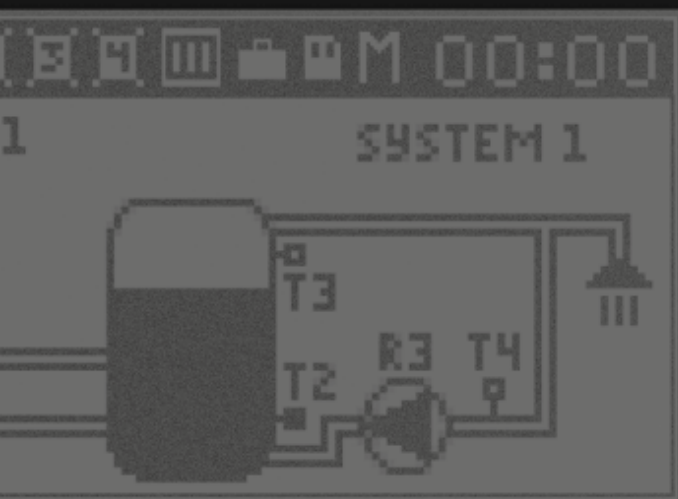
ELEMENTS AND CONNECTIONS

1	½" F temperature probe holder fitting
2	Automatic air venting valve
3	EPP insulation 0.034 W/mk. 30g/l thickness 35 mm
4	Supports for wall installation
5	Communication between chambers
6	Separation barrier between chambers
7	Internal draught tubes
8	4 1 ¼" F couplings for primary sources
9	4 1" couplings per booster units for radiant system
10	1 ½" M coupling for drainage

EXAMPLES OF APPLICATION WITH HEAT PUMP







OK



THERMO-REGULATION

Complete and efficient management of solar thermal systems even remotely with **WI-FI VERSION**



THE PB404 AND PB404 WI-FI SOLAR POWER UNITS are the efficient, universal and economical electronic control units for the management of solar and heating systems equipped with high-efficiency pumps that require safe, durable and correct control over time. The control units are characterised by 4 inputs and 4 outputs, with 14 management systems pre-configured as required. The system parameters and measured values can be controlled, modified and displayed through the backlit monochrome graphic LCD display and two-colour LED for diagnostics or signalling. Unique in the sector, they feature a touch keyboard that provides an enviable technological and aesthetic advantage.

The Wi-Fi module integrated into the PB404 WI-FI solar control unit is used to monitor and manage your solar system.



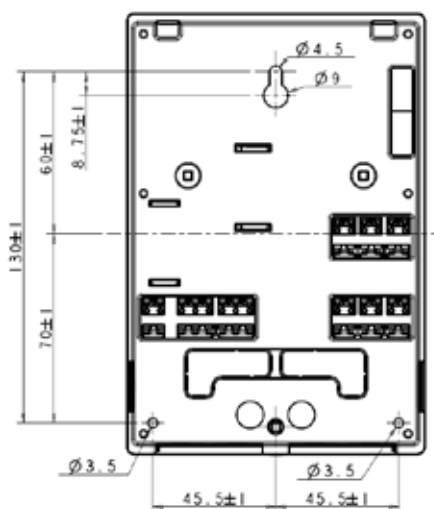
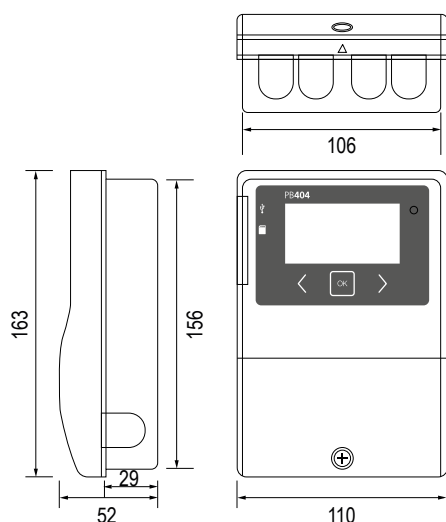
PLEISOLAR APP

Thanks to the APP, the end user will be able to view the status of their solar system while the authorised technical assistance centre will be able to regularly monitor and remotely manage it through the appropriate proprietary software.

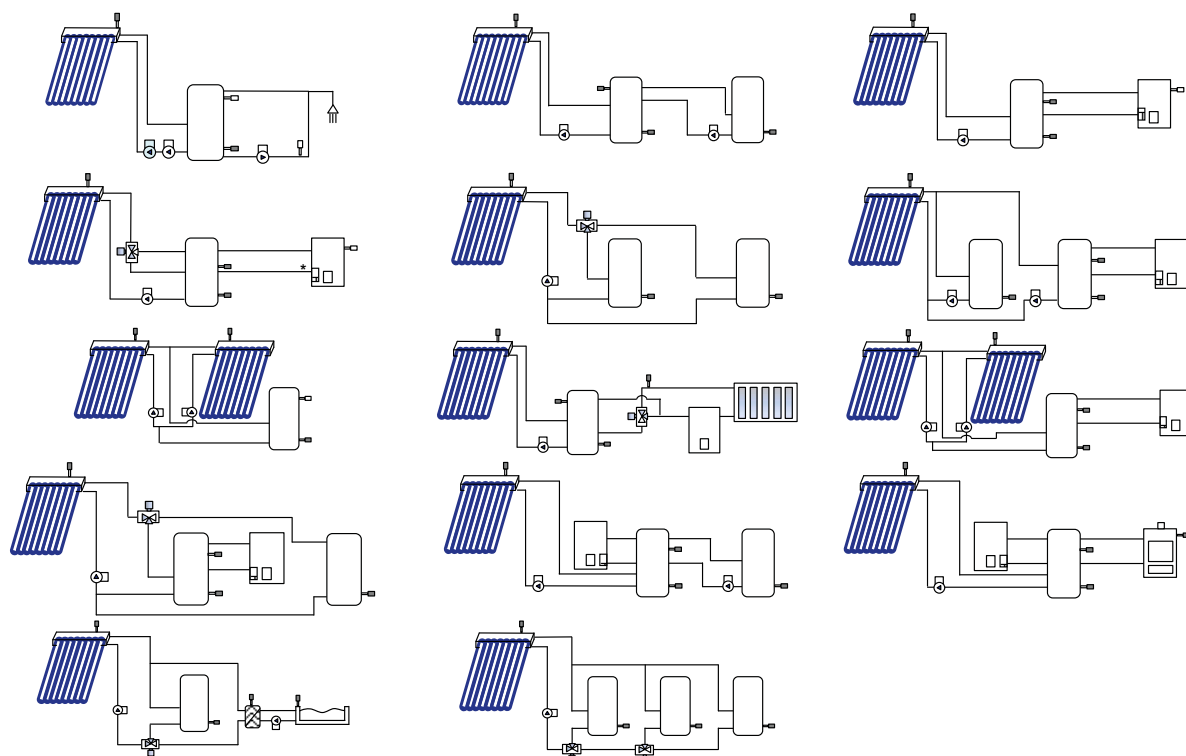


The advanced communication apparatus offers the possibility of inserting the control units into a vast and heterogeneous system, guaranteeing full control of the system at all times. In addition, the exclusive design makes them easy to handle, easy to install and suitable for use in any context. The control units allow saving of the main operating parameters thanks to the micro SD card (not included). The USB port can also be used to update the Software with the latest version.

DIMENSIONS



PB404 PRESET SYSTEMS



TECHNICAL FEATURES

Supply	240 V (50 Hz)
Total current absorption (Standby)	2A – 240V – (1.96 W)
Preconfigured systems	14
Outputs	3 240V semiconductor relays + 1 low voltage relay without potential MAX 3A
	2 PWM outputs for high efficiency pumps.
Inputs	4 for PT1000 or NTC 10K temperature probes
	1 VP40 impulse input
Functions	Anti-freeze, stagnation reduction, evacuated collector, DHW circulation, pump anti-block function, holiday, accumulator loading priority, hot water heater, cooling, Eclipse, metering, temperature graphs, status bar, chronothermostat.
Protection rating (Type of protection)	IP 20/IEC 60529 (I)
Dimensions	110x47x166 mm
Languages	English, Italian, German, and French

COD	DESCRIPTION
1030604043	PB404 solar control unit
1030604044	PB404 WI-FI solar control unit

PR805 REGULATION CONTROL UNIT

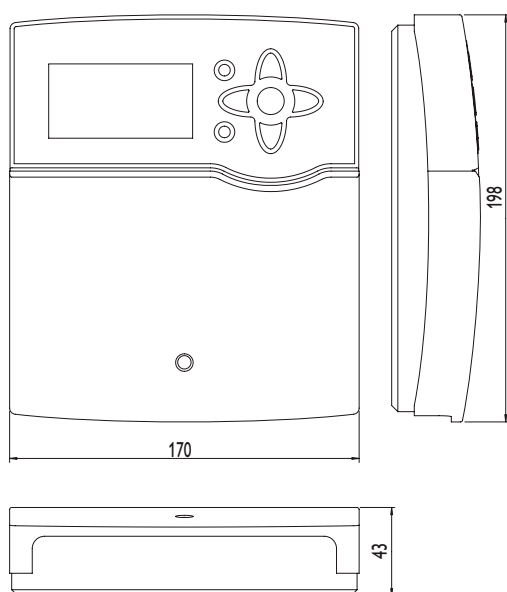
The best solution for every control need



THE PR805 SOLAR CONTROL UNIT is the most efficient, universal, and compact electronic regulator for managing COMPLEX solar systems and heating systems equipped with various accumulators and high efficiency pumps that require safe, durable, and proper control over time. The intuitive commissioning menu guides the user through the project system configuration, offering a complete overview of all available relays and probes. PR805 is the ideal control unit for managing several command outputs with a single controller. The control unit has 8 inputs and 5 outputs, but by using the Vbus® connection, 2 extension modules can be cascaded to 21 temperature inputs and 15 output relays.

Data recording, security copies, and updates of the firmware via SD card (max memory 32mb). The control unit is able to manage the automatic charging of single-pitch solar systems with up to 4 accumulators or double-pitch systems with up to 3 accumulators. Can receive two digital Grundfos Direct Sensor probes in input.

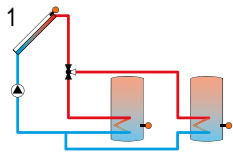
DIMENSIONS



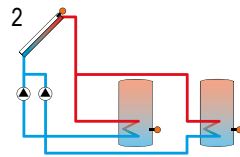
TECHNICAL FEATURES

Supply	240 V (50 Hz)
Total current absorption (Standby)	4A – 240 V (0.76 W)
Preconfigured systems	Can be made with preconfigured blocks, up to 1,000,000 solutions.
Outputs	4 240V semiconductor relays + 1 30V low voltage relay without potential
	2 PWM outputs for high efficiency pumps. Switchable on a 0-10 volt signal. PWM Frequency =512 Hz; PWM Voltage=10.8V
Inputs	8 for PT1000 temperature probes
	2 Grundfos Direct Sensors, radiation probe inputs
Data interface	VBus® - slot for SD cards
Power distribution	VBus® 35mA
Functions	DeltaT regulation, speed regulation, thermal calculation, solar pump operating time meter, tube collector, thermostat, layered tank loading, priority logic, removal of excess heat, thermal disinfection, operation control, and drain back option.
Protection rating (Type of protection)	IP 20/IEC 60529 (I)
Dimensions	198x170x43 mm

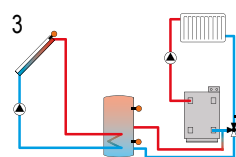
CREATABLE (NOT PRECONFIGURED) PR805 SYSTEMS



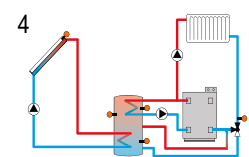
System with 2 tanks and valve command



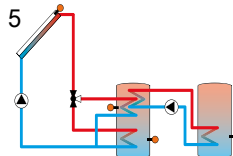
System with 2 tanks and pump command



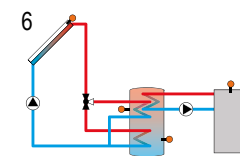
System with 1 tank and return temperature raising



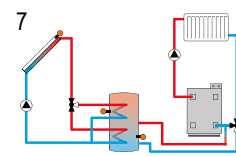
System with 1 tank, return temperature raising, and integrative heating



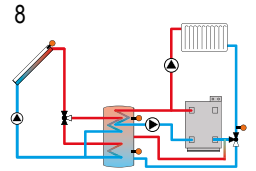
System with 1 layered tank and heat exchange



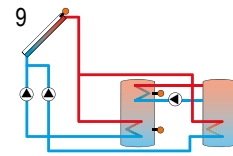
System with 1 layered tank and solid fuel water heater



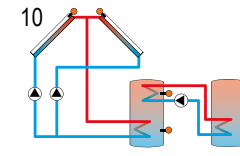
System with 1 layered tank and return temperature raising



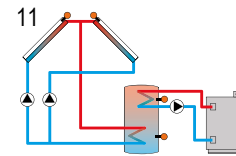
System with 1 layered tank, return temperature raising, and integrative heating



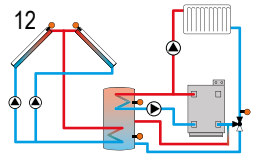
System with 2 tanks, valve command, and heat exchange



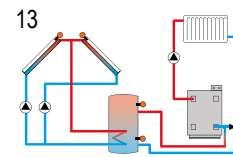
System with east/west collectors, 2 tanks, pump command, and heat exchange



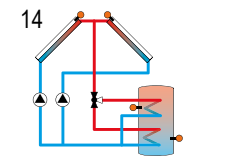
System with east/west collectors and integrative heating



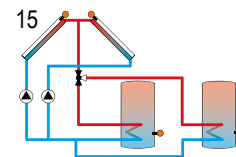
System with east/west collectors, return temperature raising, and integrative heating



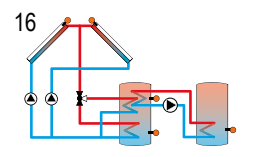
System with east/west collectors and return temperature raising



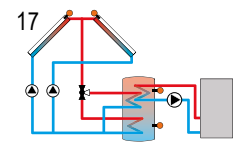
System with east/west collectors and 1 layered tank



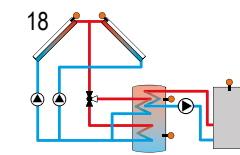
Solar system with 2 tanks and east/west collectors and valve command



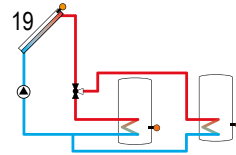
System with east/west collectors and heat exchange



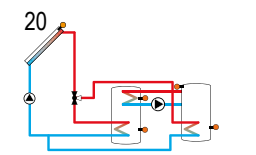
System with east/west collectors and integrative heating



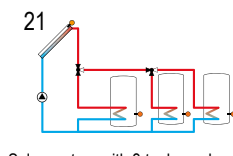
System with 1 layered tank and solid fuel water heater



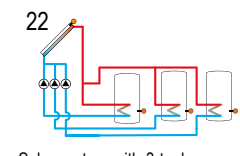
Solar system with 2 tanks, probes, and 1 3-way valve



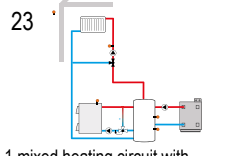
Solar system with 2 tanks, valve command, and heat exchange



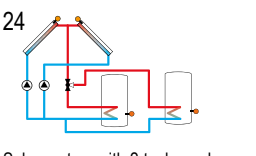
Solar system with 3 tanks and inversion valve command



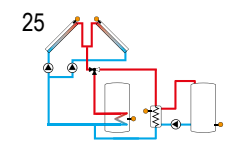
Solar system with 3 tanks, pump command, and priority logic



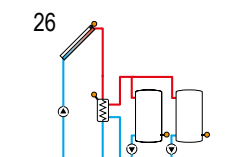
1 mixed heating circuit with solid fuel water heater and integrative heating (upon request)



Solar system with 2 tanks and east/west collectors (valve command)



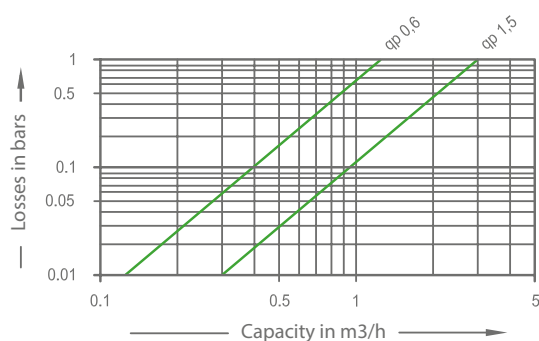
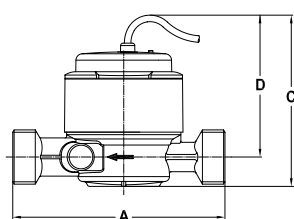
Solar system with 2 tanks, east/west collectors, 1 external heat exchanger, and 1 3-way valve



Solar system with 2 tanks, 1 external heat exchanger, and pump command

- System 0: no solar component
- System 1: 1 collector field - 1 tank
- System 2: east / west collectors - 1 tank
- System 3: 1 collector field - 2 tanks
- System 4: east / west collectors - 2 tanks
- System 5: 1 collector field - 3 tanks
- System 6: east / west collectors - 3 tank
- System 7: 1 collector field - 4 tanks

COD	DESCRIPTION
1030604051	PR805 control unit

KOPERNIKO
BOOSTER60
THERMO-REGULATION
SOLAR STATIONS
WATER MODULES
EXCHANGERS
ACCESSORIES
APPLICATIONS

Water or water and glycol mixture flow meter that can detect the capacity in transit and transmit the effective value to the solar control unit to which it must be connected via an impulse. Detecting the impulse and temperature difference between outlet and return, the solar control unit calculates the amount of heat in kWh using precise parameters (type of glycol used, seal, thermal capacity, etc.). Available in two versions: MF1 that generates an impulse every litre and MF2 that generates an impulse every 10 litres. Vertical and horizontal installation. The MF1 and MF2 gauge are equipped with single-jet turbines. DN20 couplings, upon request other fields such as DN25-40-50 are available

TECHNICAL FEATURES

			MF1	MF2
Impulse freq.		l/imp	1	10
Nominal diameter	ND	-	20	20
Meter threading	G...B	-	1	1
Coupling threading	R...	-	¾	¾
Max operating pressure	pmax	Bar	16	16
Maximum operating temp.	Tmax	°C	120	120
Nominal capacity	Qnom	m³/h	0.6	1.5
Maximum capacity	Qmax	m³/h	1.2	3
Separation limit ± 3%	Qt	l/h	48	120
Minimum horizontal capacity	Qmin	l/h	12	30
Minimum vertical capacity	Qmin	l/h	21	60
(A) Length without couplings		mm	110	110
Length with couplings		mm	208	208
(C) Alt. meter with impulse launch		mm	108	108
(D) Alt. meter with half tube		mm	90	90
Meter width		mm	72	72
Weight without couplings		kg	0.7	0.7

COD	DESCRIPTION
1030601001	MF1 flow meter
1030601011	MF2 flow meter

PT 1000 TEMPERATURE SENSORS



Immersion or contact temperature sensors, based on the application, that can be installed inside the probe-holder fitting or in contact with the conductor using a metallic strap.

TECHNICAL FEATURES

Measurement range	- 50 °C ... +180 °C
Nominal diameter	15 mm (contact probe) - 6 mm (immersion probe)
Length of silicon cable	3,000 mm (contact probe) - 1,500 mm (immersion probe)
Bulb length	20 mm (contact probe) - 50 mm (immersion probe)
Bulb material	aluminium (contact probe) - stainless steel (immersion probe)

COD	DESCRIPTION
1030901131	Immersion probe PT1000
1030901141	Contact probe PT1000

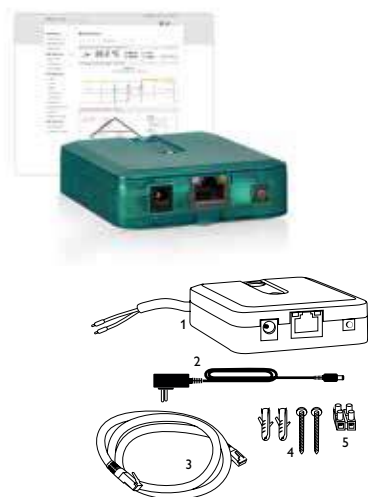
B1 SOLAR CELL



The B1 solar cell detects the intensity of the current solar radiation. The short circuit current increases as the intensity of the radiation rises. Only PR805 control units can be paired with the solar cell and a further plausibility control, direct plant regulation function (under a minimum radiation value, the solar station is not activated), or as a radiometer that can insert or remove a relay regardless of the detected radiation value. If during the delay time the radiation value detected is greater than the input value, the assigned relay is inserted. When the option is enabled to invert the relay, it reacts in the opposite manner. The connection cable may be equipped with a 100-metre extension cable.

COD	DESCRIPTION
1030601004	B1 solar cell

PR C COMMUNICATION MODULE



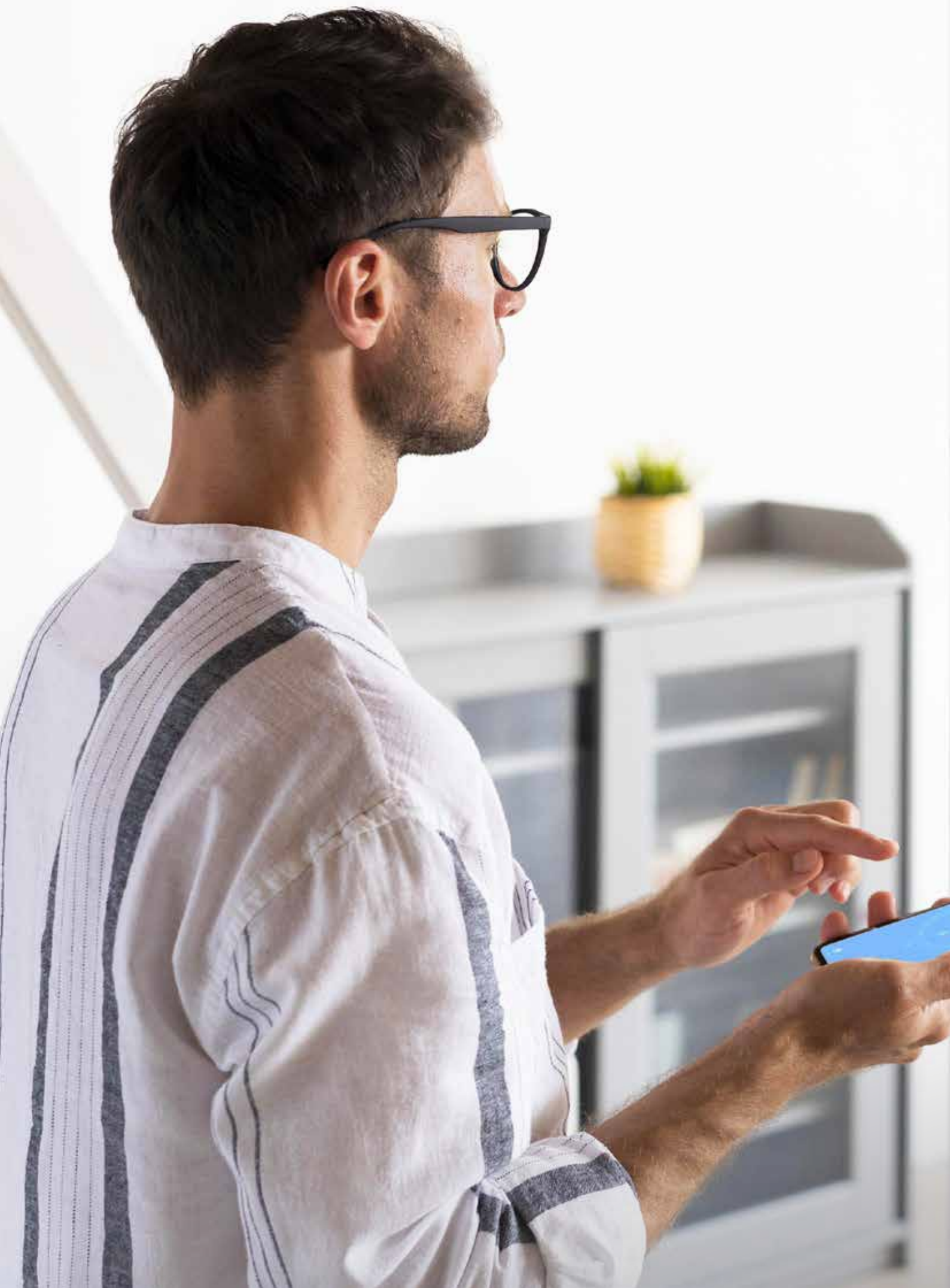
The PR C communication module is the perfect interface between a PLEION solar or heating regulator in the PR series and the internet. The connection between the regulator and the RESOL VBus.net portal takes just a few steps. The communication modules was designed for all PLEION PR series regulators equipped with VBus® and allows simple and secure access to the system data through VBus.net.

- 1 - PR C communication module, power supply and VBus® cable already connected
- 2 - Power supply (EURO, UK, USA, AUS)
- 3 - Network cable (CAT5e, RJ45), 2 m
- 4 - Screws, anchors, and slip-proof rubber pieces
- 5 - Gland nut for extending the VBus® cable

TECHNICAL FEATURES

Plastic	casing
Protection rating	IP 20 / EN 60529
Dimensions	95 × 70 × 25 mm
Assembly	Wall
Environmental temperature	0 ... 40 °C
Lights	LED operating control
Supply	Power supply input voltage: 100 ... 240 V~ (50 ... 60 Hz) Nominal Current: 146 mA Communication module input voltage: 12 V DC ± 5
Interface	VBus® for connecting to the PR control units, 10/100 Base TX Ethernet, Auto MDIX, WLAN 2.4~2.4835 GHz
Absorbed power	<1.75 W

COD	DESCRIPTION
1030630001	PR C communication module





PLEITOUCH AND PLEITOUCH CLIMA

2022 LAUNCH

PleiTouch[•]

PleiTouch[•] CLIMA

SAVE TIME
AND ENERGY WITH STYLE

WITH THE NEW PLEION SMART THERMOSTAT



SIMPLE, COMPLETE AND INTELLIGENT

PLEITOUCH is a chrono-thermal-humidistat bus used to control the temperature and humidity in a room. Suitable for managing floor, wall, or ceiling radiant panel systems and fan coil systems (with 0-10V regulation). Together with PleiTouch Clima, it is a complete, modular system that can be expanded as desired, for thermo-regulation of heating and cooling systems.

KEEP EVERYTHING UNDER YOUR CONTROL



WiFi
CONNECTION



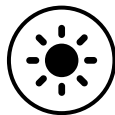
DEHUMIDIFICATION
AND INTEGRATION



DESIGN
MADE IN PLEION



RADIANT



HEATING



PROGRAMMING
24h/WEEKLY



FANCOIL 0-10



COOLING



MODBUS RS 485



SMART CONTROL

2022 LAUNCH

By downloading the application on either Apple or Android devices, you can manage all the thermostats in the house directly from your smartphone, no matter where you are.

Primary functions
of the application:

- Setting the temperature
- Setting the humidity
- Setting the scheduler
- Turning the device on or off



2022 LAUNCH

PleiTouch°

PleiTouch°
CLIMA**PleiTouch°**

PLEITOUCH is a chrono-thermal-humidistat bus used to control the temperature and humidity in a room. Suitable for managing radiant panel systems (floor, ceiling, or wall), fan coil systems (including with 0-10V regulation), or mixed systems in both heating and summer cooling.

DIMENSIONS

Height	Length	Depth
86 mm	96 mm	40 mm

PLEITOUCH CLIMA is a climate regulator able to manage the outlet temperature to the system in heating and cooling mode through the management of a 3-way mixing valve, both 2-point 230V and 0-10V, in compliance with UNI EN 1264-3. It also has internal relays dedicated to exchanger consent and summer/winter switching. It includes outlet immersion temperature sensor and external temperature sensor.

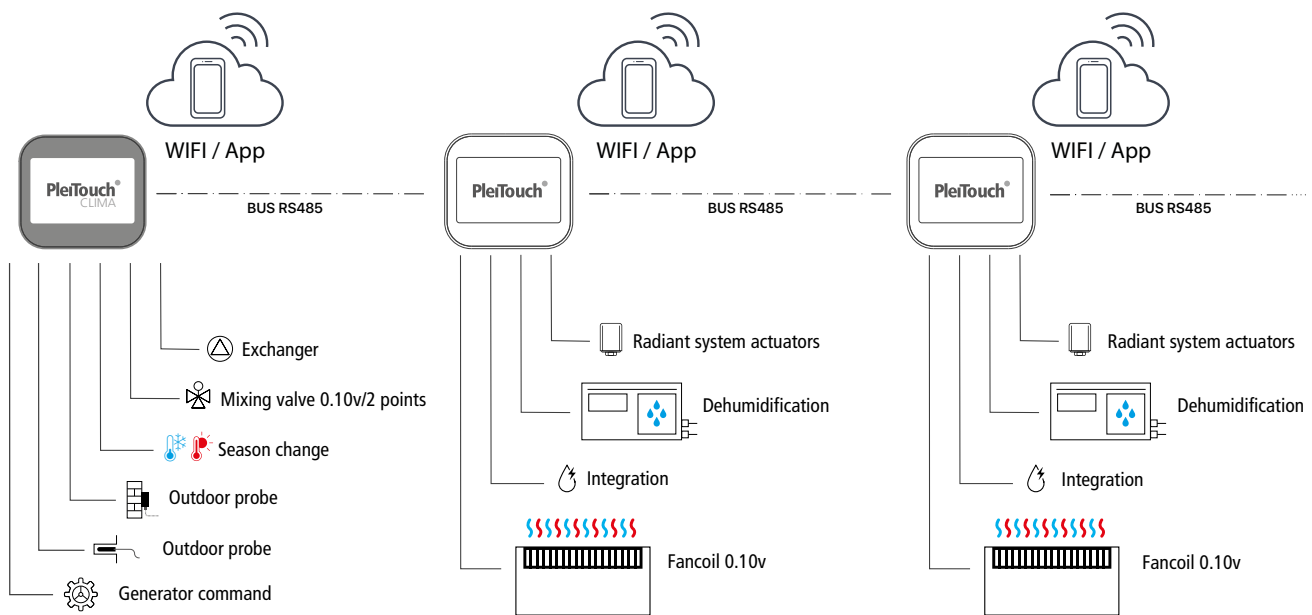
PleiTouch° CLIMA**SMART CONTROL**

By downloading the application on either Apple or Android devices, you can manage all the thermostats in the house directly from your smartphone, no matter where you are - sitting comfortably on the couch, in the office, or anywhere else.

**Primary application functions:**

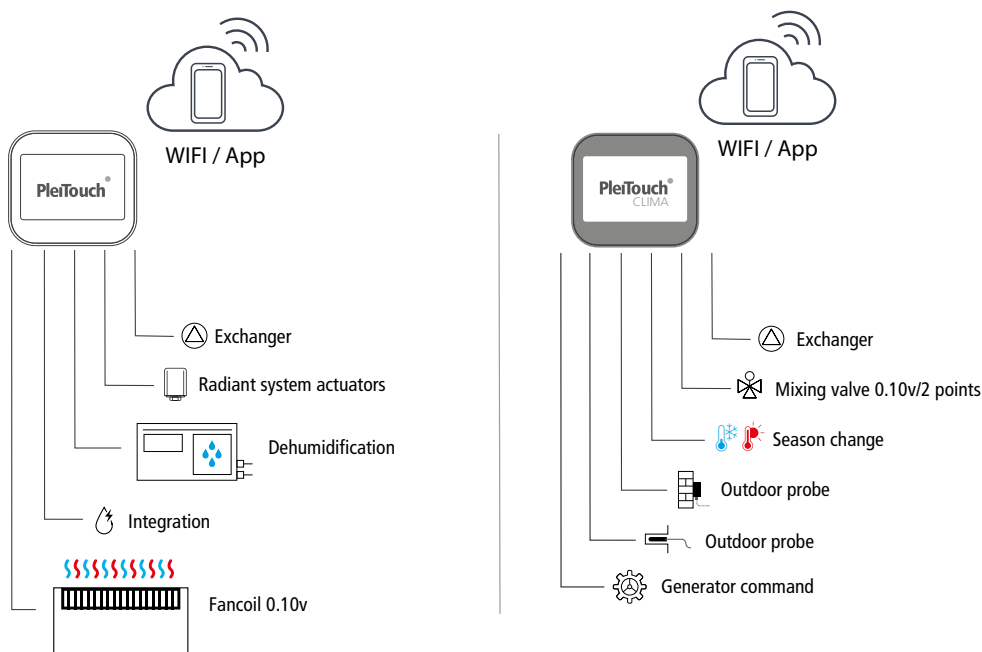
- **Setting the temperature**
- **Setting the humidity**
- **Setting the scheduler**
- **Turning the device on or off**
- **Summer/winter switchover**

EASY WALL INSTALLATION

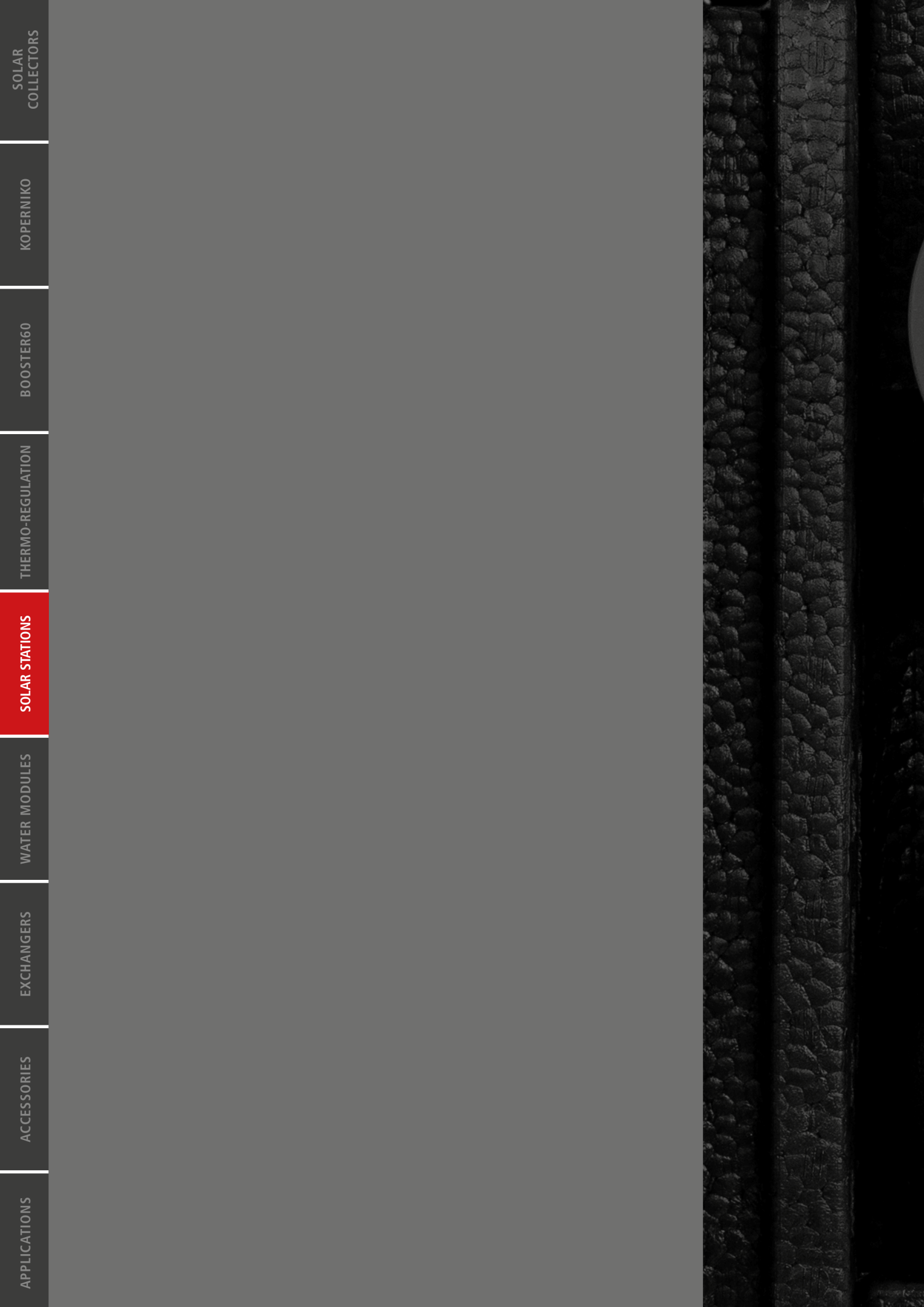


PleiTouch* and **PleiTouch* CLIMA** are elements of a modular thermo-regulation system that can be expanded as you wish. They have a MODBUS RS485 connection through which they communicate with each other, forming a single organic system for managing living comfort. They can also be interfaced to com-

patible home automation systems with the standard MODBUS RS485. In any case, nothing says the PleiTouch and PleiTouch Clima cannot be used on their own.



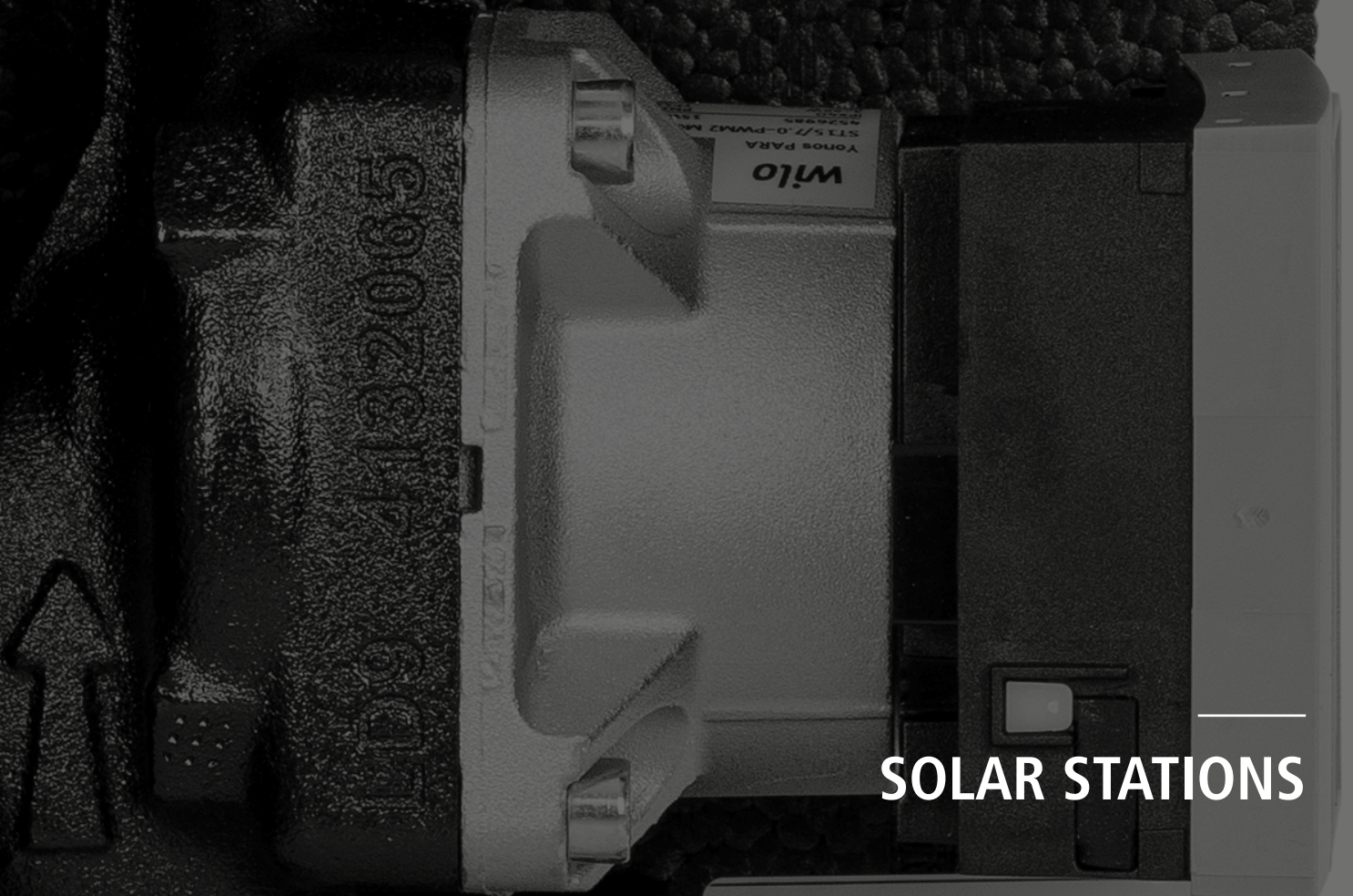
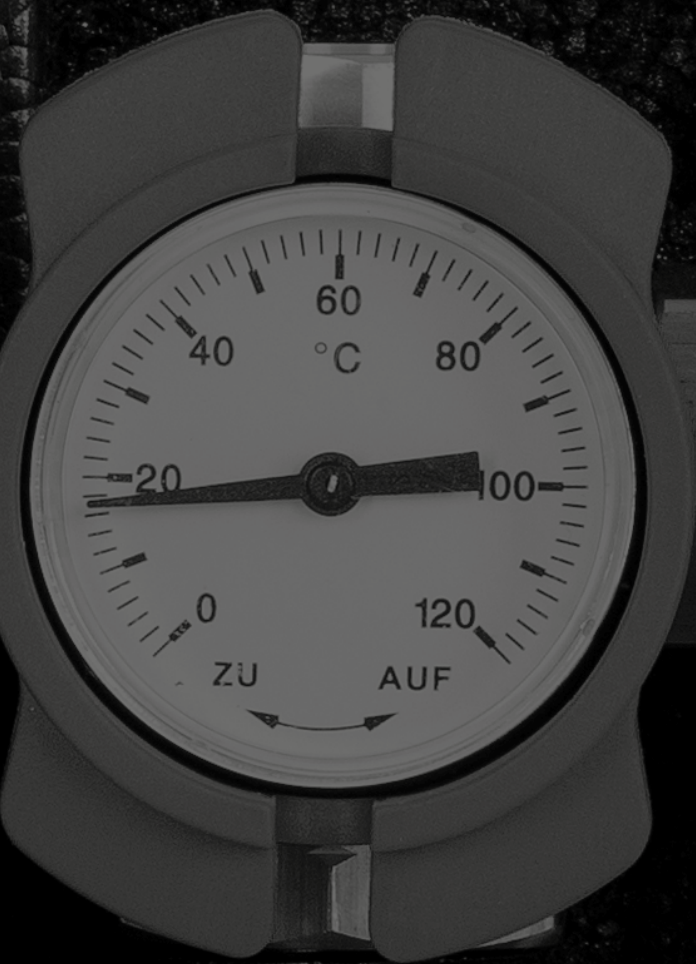
DESCRIPTION		COD
PLEITOUCH	Chrono-thermo-humidistat	7081202040
PLEITOUCH CLIMA	SMART climate controller with external probe and outlet probe	7081202041
WALLBOX	Flush-mount box 86x86	7081202030



APPLICATIONS	ACCESSORIES	EXCHANGERS	WATER MODULES	SOLAR STATIONS	THERMO-REGULATION	BOOSTER60	KOPERNIKO	SOLAR COLLECTORS
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PLEION

The Solar that warms your LIFE!



SOLAR STATIONS


Kugelhahnfunktionen

SOLAR STATIONS

PLEION solar stations can be used for better management of the circulation of heat transfer fluid inside the solar circuit. The DN20 and DN25 range allow coverage of system surfaces starting at 2-4 m² with a single tube solution and reaching surfaces of 90-140 m² based on the type of collector (flat – evacuated). PLEION solar stations have two regulations fields, 1-13 l/min and 5-35 l/min, to be doubled thanks to the parallel connection, and 10-70 l/min.

PLEASE NOTE: CHECKING THE PROPER SIZING OF THE SOLAR STATION BASED ON THE EFFECTIVE CAPACITY NEED AND LOAD LOSS OF THE SOLAR CIRCUIT IS RECOMMENDED.

SOLAR STATION OVERVIEW

TECHNICAL FEATURES	MODELS				
	M12-7	M13-7	B13-7	B35-9	2xB35-9
Type	Single tube		Double tube	Double tube	Double tube
Nominal dimensions	DN20		DN20	DN25	DN25x2
Regulation flow meter	1-13 l/min		1-13 l/min	5-35 l/min	5-35 l/min x 2
Circulation pump	GPA 20/7,5	GRUNDFOS UMP3 SOLAR 15-75	GRUNDFOS UMP3 SOLAR 15-75	WILO Yonos Para 15/9.0	WILO Yonos Para 15/9.0 x2
SIZING					
Flat collector surface (m²)	26		26	70	140
UNIKO-P21 collector (pc.)	14		14	38	76
KSF-P26 collector (pc)	11		11	30	60
KSF-M25 collector (pc)	11		11	30	60
Evacuated collectors surface (m²)	20		20	50	95
X-RAY10R collector (pc)	9		9	24	49
X-RAY15R collector (pc)	6		6	16	33
X-RAY18R collector (pc)	5		5	13	26
X-RAY21R collector (pc)	4		4	11	22
ECLIPSE 2 collector (pc)	8		8	20	40
X-RAY10R collector (pc)	9		9	24	49
					

For small and medium-sized monotube and reversible systems



M12-7



M13-7

M12-7 and M13-7 are two compact MONOTUBE solar stations, completely pre-assembled to be installed in the cold side return section of the panels. They are able to cover surfaces of up to 26 m² of flat collectors or 17 m² of vacuum collectors. The stations are equipped with a flow meter with a regulation range of 1-13 l/min, drain valve, GRUNDFOS UMP3 SOLAR 15- 75 high-efficiency circulator, a safety unit consisting of a pressure gauge (0-10 bar) and a 6-bar calibrated safety valve, a load valve, connections for attachment to the solar expansion tank, a ball valve equipped with a non-return valve (20 mbar) and an integrated thermometer. On the delivery section there is no deaerator which however can be provided separately.

The M12-7 and M13-7 solar stations, thanks to the BM HYDRAULIC KIT, are suitable to be combined with the B13-7 station in the case of:

- double-pitch solar systems joining the delivery section of the two circuits;
- systems with double sanitary storage and heating;
- the need to increase the flow range of a system (in this case check the characteristics of the existing pump).



M13-7
CON PB404



GUSCIO M12-7



GUSCIO M13-7

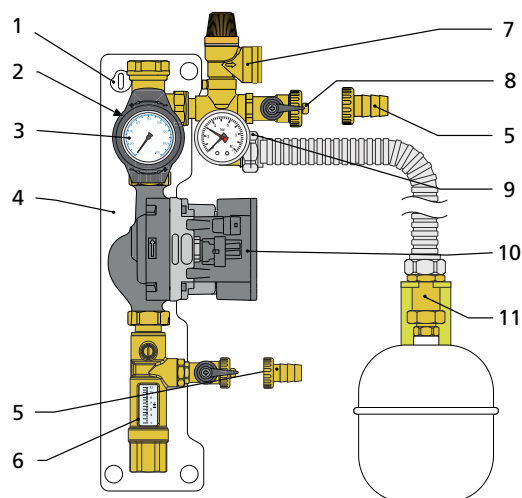
The high-performance thermal insulation shell allows maximum reduction of dispersions as well as protecting the electronic control unit seat. Ready to be assembled directly on the wall using the brackets inside the pack.

The M13-7 unit is available without the M13-7 Eco version regulation control unit or in basic configurations with PB404 regulation control unit and Pro with PR404 control unit.

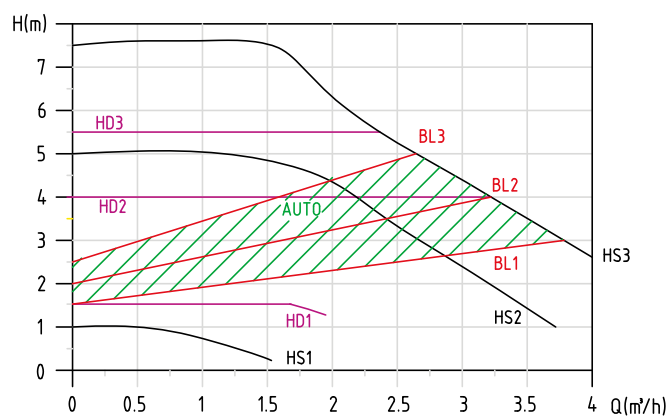
M12-7

COMPONENTS

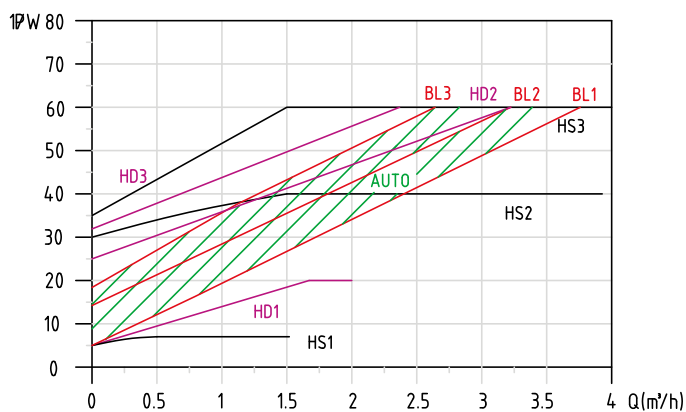
1	Fastening bracket
2	Ball shut-off valve with retention with thermometer-holder knob
3	Return thermometer
4	Preformed shell insulation
5	Hose connector
6	Flowmeter
7	Safety valve with adjustable discharge 253 series type
8	Loading/unloading valve with operating lever
9	Instrument-holder fitting with pressure gauge
10	Circulation pump GPA 20/7,5
11	Expansion vessel connection kit (Optional)



CHARACTERISTIC POWER

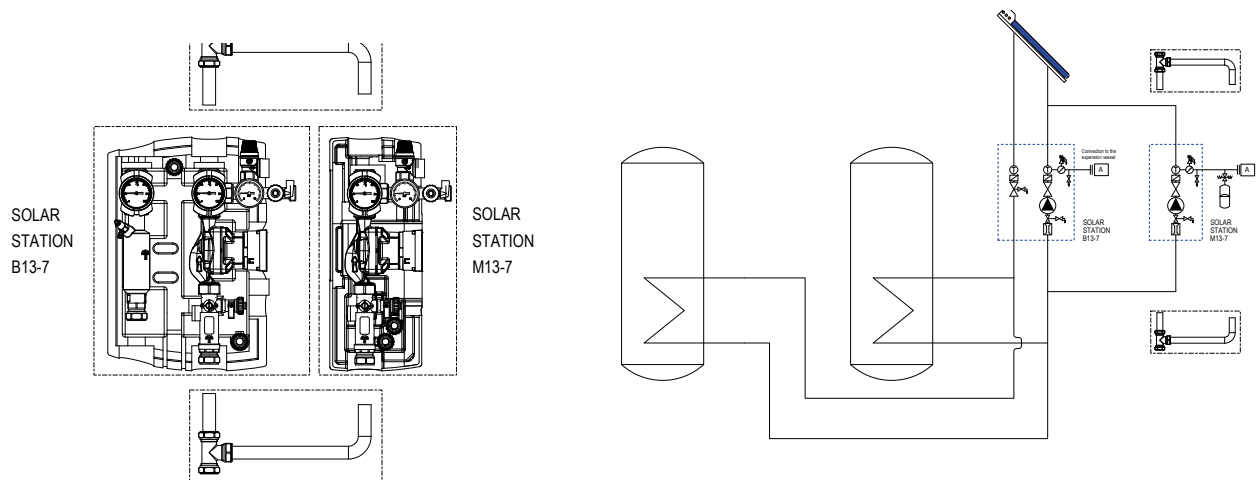


CONSUMPTION CURVE



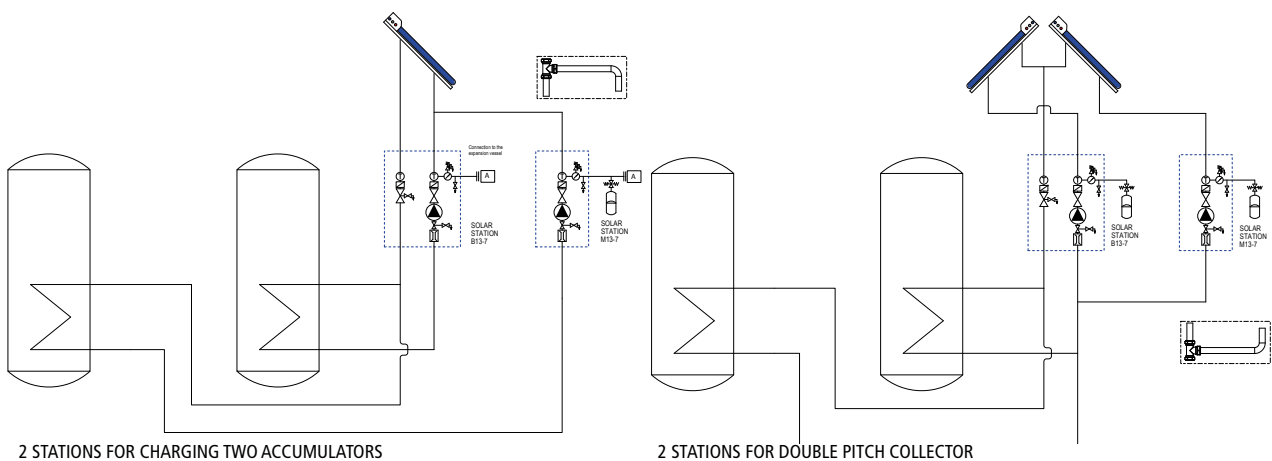
COD	DESCRIZIONE	CENTRALINA
1040101210	M12-7 Eco Solar Station	-
1040101211	M12-7 Basic Solar Station	PB404

EXAMPLES OF HYDRAULIC DIAGRAMS THAT CAN BE CREATED BY PAIRING THE M13-7 AND B13-7 SOLAR STATIONS USING THE BM13-7 CONNECTION KIT



COMPONENTS

STATIONS CONNECTED IN PARALLEL

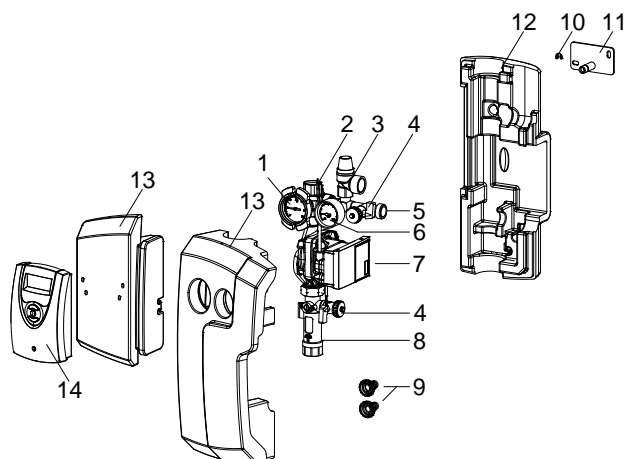


2 STATIONS FOR CHARGING TWO ACCUMULATORS

2 STATIONS FOR DOUBLE PITCH COLLECTOR

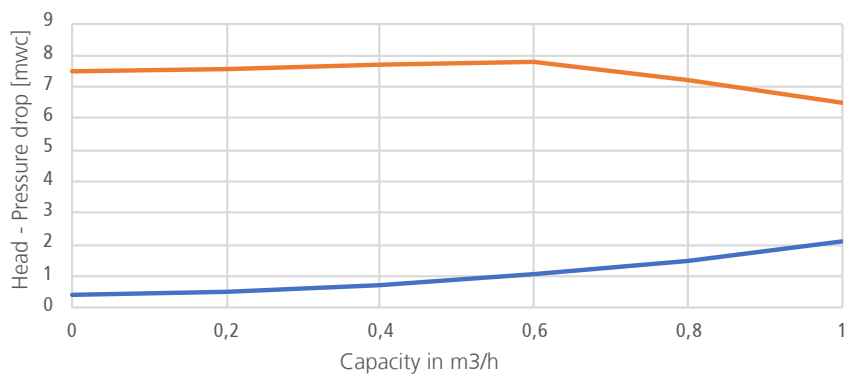
MEMBERS

1	Thermometer
2	Ball valve with integrated check valve
3	Safety valve 6 bars
4-5	Fill Tap and coupling to expansion vessel
6	Gauge
7	Circulation pump
8	Regulation flow meter
9	Connection taps
10	Blocking element
11	Wall brackets
12	Rear insulation
13dx-13sx	Front insulation (13sx, only with control unit)
14	Control unit (Version with control unit included)

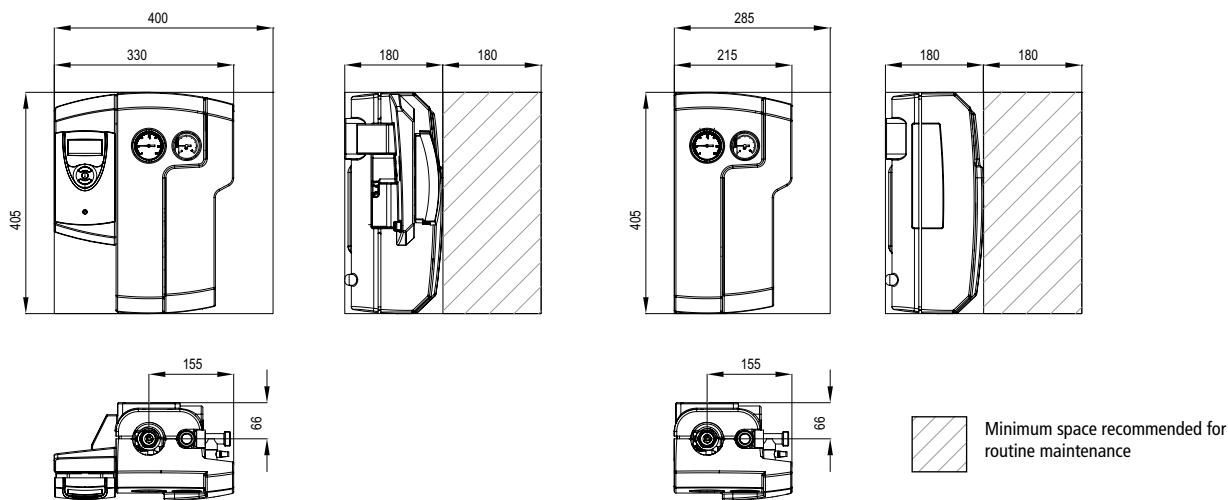


M13-7

LOAD LOSS AND PERFORMANCE CURVES - M13-7 SOLAR STATION



SIZE AND DIMENSIONS



Wall mounting distances: hydraulic connections set up; dimensions of the module and recommended distances.

MATERIALS	
Fittings	Brass
Gaskets	EPDM
Insulation	EPP $\lambda=0.038$ W/mK
Check valve	Brass
TECHNICAL DATA	
Max pressure	6 bar
Max. temperature	120 °C
COMPONENTS	
Flowmeter	Regulation range 1-13 l/min
Pump	GRUNDFOS UMP3 SOLAR 15-75
Check valve	20 mbar
Gauge	0-10bar
Thermometer	0-120 °C
Safety valve	6 bar
Check valve	20 mbar
DIMENSIONS	
Couplings	3/4" F
Footprint	405x330x180 mm - 405x215x180 mm

COD	DESCRIPTION	CONTROL UNIT
1040101310	M13-7 Eco Solar Station	-
1040101311	M13-7 Basic Solar Station	PB404
1040101312	M13-7 Pro Solar Station	PR404
92 1040000000	BM13-7 Connection Kit	-

For small and medium double tube systems



B13-7 is a compact DOUBLE TUBE solar station, completely premounted to be installed in solar circuit and capable of covering surfaces up to 26 m² of flat collectors or 20 m² of evacuated collectors. The station is equipped in the return section with a flow meter with a regulation range of 1-13 l/min, a drain tap, a GRUNDFOS UMP3 SOLAR 15-75 high-efficiency exchanger, a safety unit consisting of a pressure gauge (0-10 bar) followed by a safety valve set at 6 bars, a filling tap, connections for connecting the solar expansion vessel and a blue ball valve with a check valve (20 mbar) and an integrated thermometer. In the outlet section there is a red ball valve equipped with a thermometer and integrated check valve and large degasser designed to eliminate air during the system startup phase as well as ensure correct operation over time.

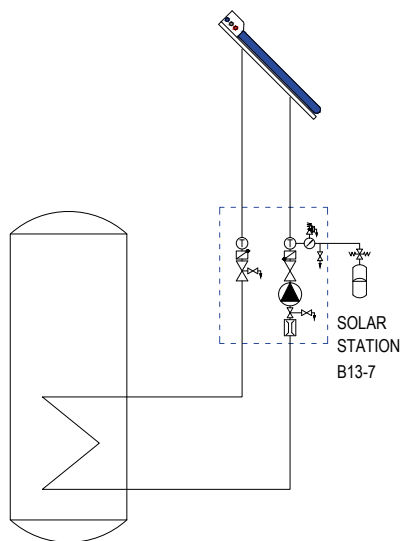


The preformed thermal insulating casing allows maximum reduction of dispersion and protects the electronic control unit housing. Ready to be installed directly on the wall using the brackets included in the package.

The unit is available without a regulation control unit, Version B13-7 Eco, or in the Basic configurations with PB404 regulation and Pro with PR404 control unit.

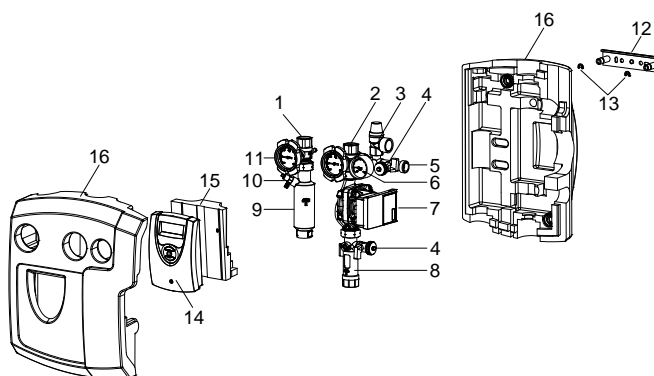
B13-7

HYDRAULIC DIAGRAM

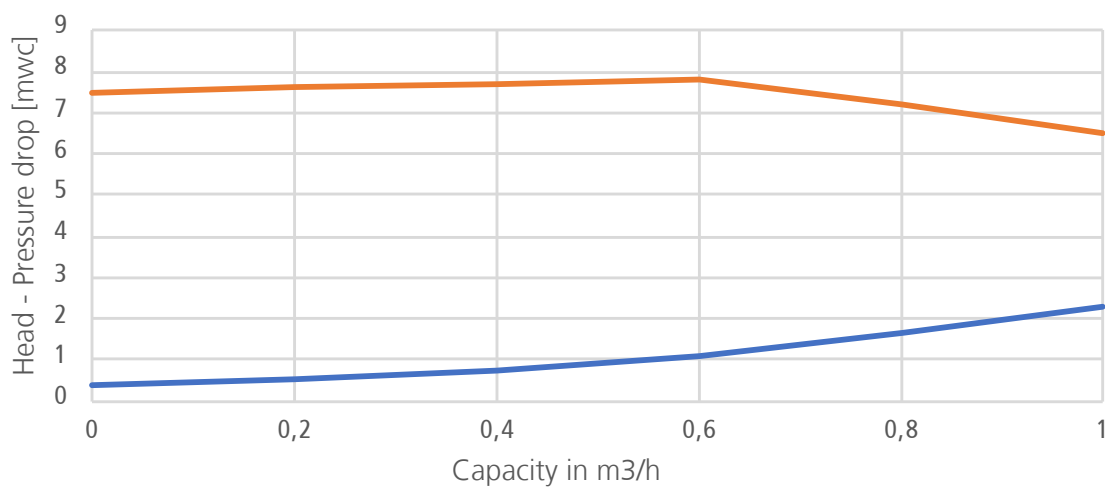


MEMBERS

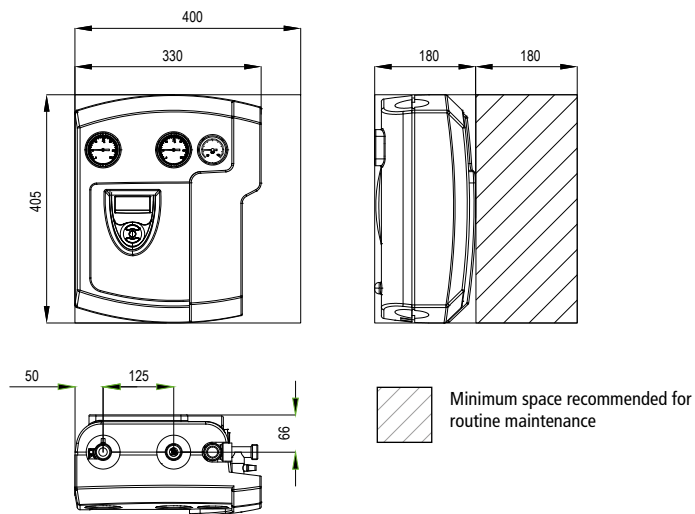
1-2	Outlet and return ball valve
3	Safety valve 6 bars
4	System filling and discharge tap
5	Coupling for expansion vessel
6	Gauge
7	Circulator
8	Regulation flow meter
9	Degasser
10	Manual venting tap
11	Thermometer
12	Wall bracket
13	Sealing element
14	Electronic control unit (if applicable)
15	Support insulation for control unit
16	Front and rear insulation



LOAD LOSS AND PERFORMANCE CURVES - B13-7 SOLAR STATION



SIZE AND DIMENSIONS



Wall mounting distances: hydraulic connections set up; dimensions of the module and recommended distances.

TECHNICAL FEATURES

MATERIALS	
Fittings	Brass
Gaskets	EPDM
Insulation	EPP $\lambda=0.038$ W/mK
Check valve	Brass
TECHNICAL FEATURES	
Max pressure	6 bar
Max. temperature Outlet	140 °C
Max. temperature Return	120 °C
MEMBERS	
Flowmeter	Regulation range 1-13 l/min
Pump	GRUNDFOS UMP3 SOLAR 15-75
Gauge	0-10 bar
Thermometer	0-120 °C
Safety valve	6 bar
Check valve	20 mbar x 2
DIMENSIONS	
System couplings	3/4" F
Safety valve couplings	3/4" F
System fill-discharge couplings	1/2" M
Footprint	405x330x180 mm
Spacing	125 mm

COD	DESCRIPTION	CONTROL UNIT
1040101320	B13-7 Eco Solar Station	-
1040101321	B13-7 Basic Solar Station	PB404

For medium and large double tube systems



B35-9 is a compact DOUBLE TUBE solar station, completely premounted to be installed in solar circuit and capable of covering surfaces up to 70 m² of flat collectors or 50 m² of evacuated collectors. The station is equipped in the return section with a flow meter with a regulation range of 5-35 l/min, a drain tap, a Wilo Yonos Para 15/1-9 PWM2 high-efficiency exchanger, a safety unit consisting of a pressure gauge (0-10 bar), safety valve set at 6 bars, a filling tap, and couplings for connecting the solar expansion vessel; finally, a blue ball valve with a check valve (20 mbar) and an integrated thermometer close the return section. In the outlet section there is a red ball valve equipped with a thermometer and integrated check valve and large degasser designed to eliminate air during the system startup phase as well as ensure correct operation of the system over time.

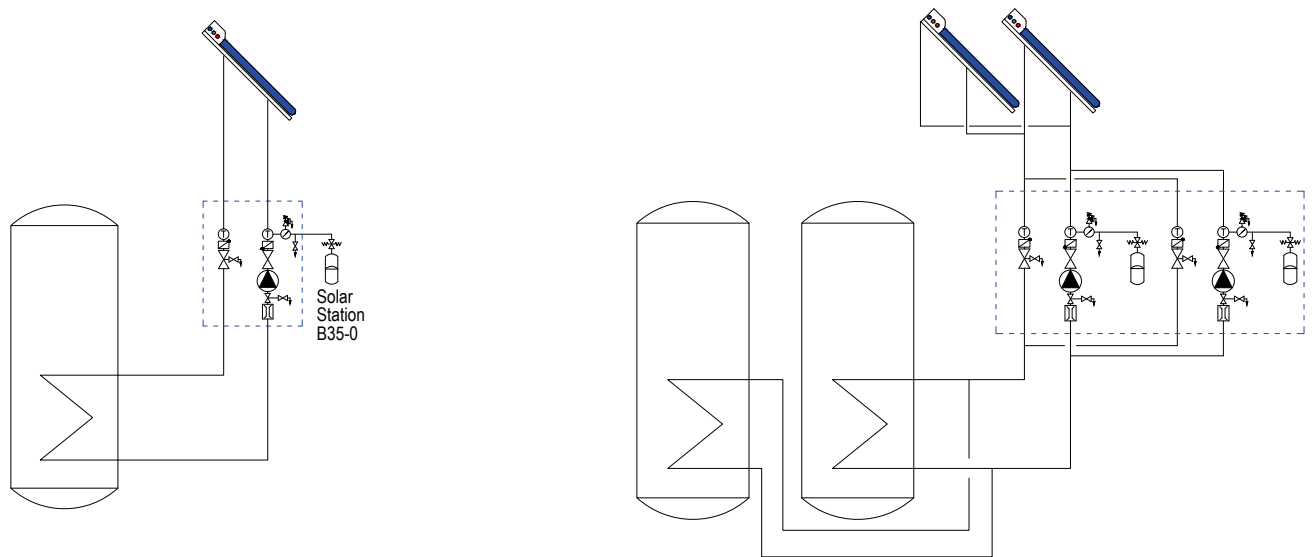
Connecting two B35-9 in parallel can guarantee coverage of solar systems up to 140 m² of flat collectors or 100 m² of evacuated collectors.



The preformed thermal insulating casing allows maximum reduction of dispersion and protects the electronic control unit housing. Ready to be installed directly on the wall using the brackets included in the package.

The unit is available without a regulation control unit, Version B35-9 Eco, or in the Basic configurations with PB404 regulation and Pro with PR805 control unit.

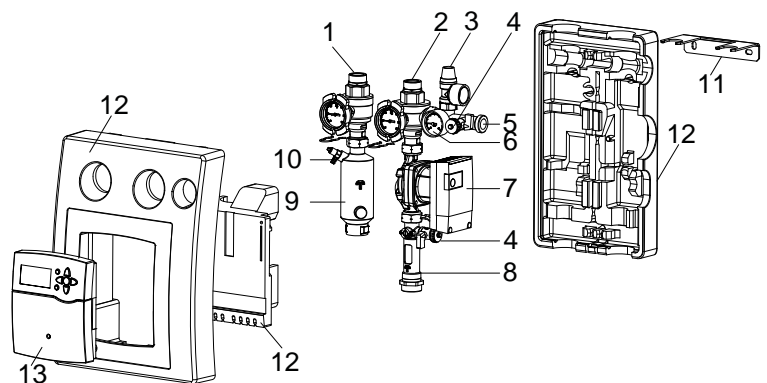
HYDRAULIC DIAGRAM



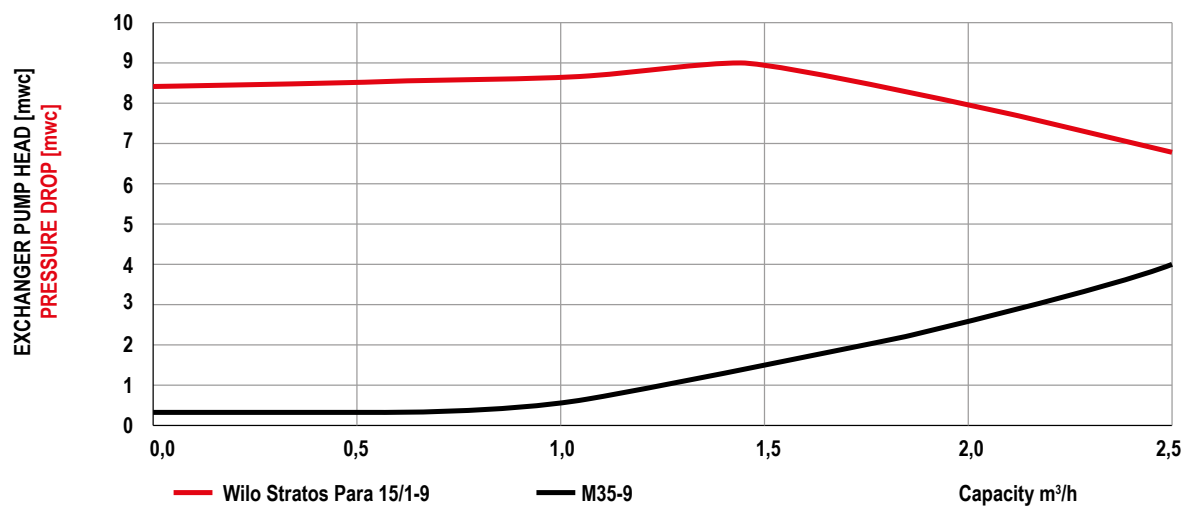
Single and parallel configuration of two B35-9 solar stations.

MEMBERS

1-2	Outlet and return ball valve with check
3	Safety valve 6 bars
4	System filling and discharge tap
5	Coupling for expansion vessel
6	Gauge
7	Exchanger
8	Regulation flow meter
9	Degasser
10	Manual venting tap
11	Wall bracket
12	Front, control unit support, and rear insulation
13	Electronic control unit (if applicable)

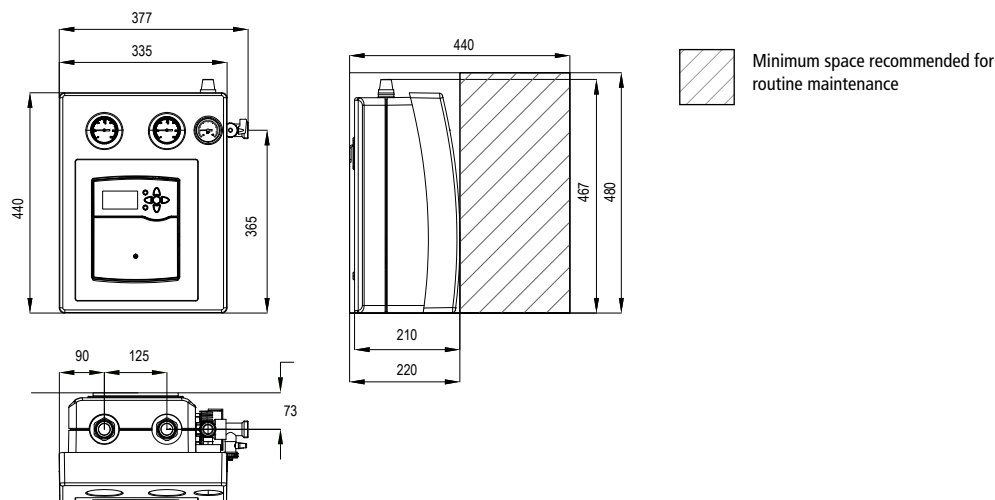


LOAD LOSS AND PERFORMANCE CURVES - B35-9 SOLAR STATION



B35-9 AND B35-9 x2

SIZE AND DIMENSIONS



Wall mounting distances: hydraulic connections set up; dimensions of the module and recommended distances.

TECHNICAL FEATURES

MATERIALS	
Fittings	Brass
Gaskets	EPDM
Insulation	EPP $\lambda=0.038$ W/mK
Check valve	Brass
TECHNICAL FEATURES	
Max pressure	6 bar
Max. temperature Outlet	140 °C
Max. temperature Return	120 °C
MEMBERS	
Flowmeter	Regulation range 5-35 l/min
Pump	Wilo Para Yono 15/1-9 PWM2
Gauge	0-10bar
Thermometer	0-120 °C
Safety valve	6 bar
Check valve	20 mbar x 2
DIMENSIONS	
System couplings	1" F
Safety valve couplings	3/4" F
Fill-discharge couplings	1/2" M
Footprint	470x380x215 mm
Spacing	125 mm

COD	DESCRIPTION	CONTROL UNIT
1040103520	B35-9 Eco Solar Station	-
1040103521	B35-9 Basic Solar Station	PB404
1040103522	B35-9 Pro SOLAR STATION	PR805
1040107022	2 x B35-9 Pro Solar Station *	PR805 **

* Parallel configuration

** A single PR 805 control unit to manage 2 pumps

APPLICATIONS

ACCESSORIES

EXCHANGERS

WATER MODULES

SOLAR STATIONS

THERMO-REGULATION

BOOSTER60

KOPERNIKO

SOLAR
COLLECTORS



PLEION

The Solar that warms your LIFE!



WATER MODULES

WATER MODULES

WATER MODULES

SAN

PLEION SAN: Instantaneous modules for the production of domestic hot water free of legionella. Domestic water is heated through the use of a heat exchanger with countercurrent fluids. Effective protection against limescale. High efficiency for cascade installations (excluding SAN F30T/F30 T VE)

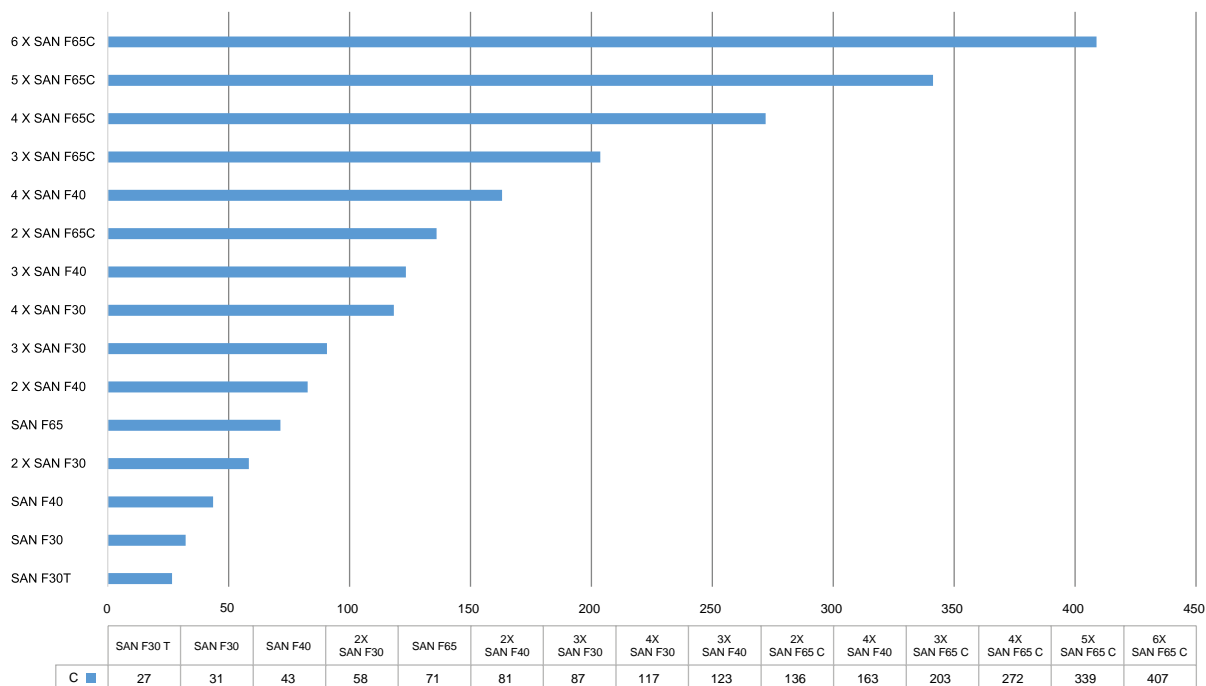
The instantaneous domestic hot water production modules are used to take heat from an accumulation tank to heat domestic water. Plate heat exchangers are used to separate the accumulation tank from the domestic water. The amount of heat needed to heat the water comes exclusively from the accumulation tank while the hot water is only heated when it is used. Therefore, extremely hygienic and potable hot water is available instantaneously. The flow through the plate heat exchangers is based on the countercurrent principle. The exchangers have thermal lengths that ensure high energy efficiency. The low temperatures and high flow speed inside the plate heat exchanger circuits offer double protection against limescale.

The SAN SERIES is broken down into:

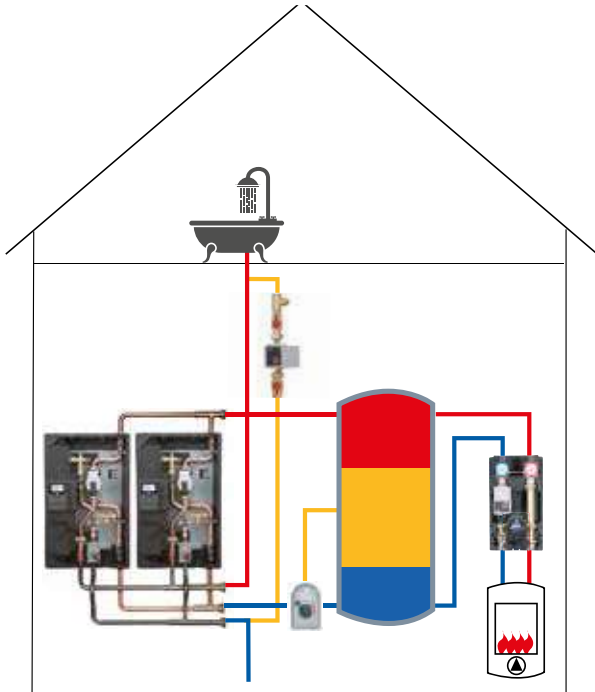
SAN F30T - SAN F30 T VE	Universal domestic water module for single family housing	with thermostatic control
SAN F30 - SAN F30 VE	Domestic water module with infinite work possibilities	with electronic regulation
SAN F40 - SAN F40 VE		
SAN F65 - SAN F65 VE	Instantaneous domestic hot water production module for medium and large systems	cascade valve included in the "C" version
SAN F65 C - SAN F65 C VE		

The diagram shows the maximum possible extraction potential

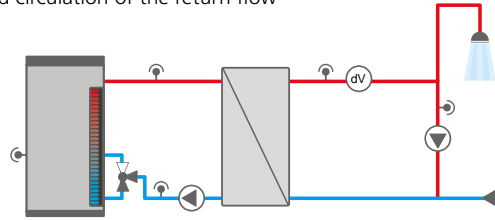
Maximum temperature capacity of the accumulator - 75 °C, cold water temperature 10 - 60 °C mixed at 45 °C



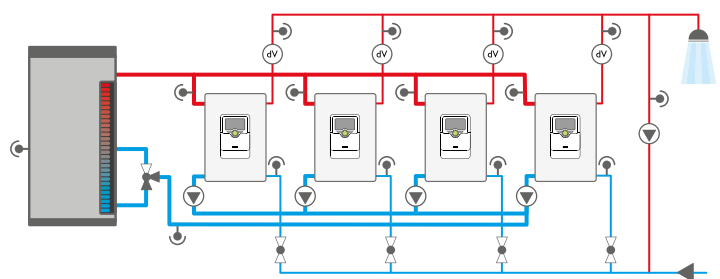
C: maximum withdrawal volume at 45 °C [l/min]



SINGLE STATION:Figure of the sensor with layering and circulation of the return flow



CASCADING:Figure of the sensor with layering and circulation of the return flow



All SAN F modules for domestic water are available in 2 versions: standard and VE.

The standard versions have copper-brazed stainless steel plate heat exchangers. In the VE versions, stainless steel is used not only in the plates, but also as a filler material for brazing in order to make the exchanger particularly sturdy and durable even in those conditions where dissolved salts make the water particularly harsh. The first thing to check when choosing the most suitable type, is the electrical conductivity of the water. If the water conductivity is greater than or equal to 500 μS , then version "VE" is highly recommended. For a more detailed verification, however, it is recommended to refer to the table below:

LIMIT VALUES FOR DOMESTIC WATER:	Standard version with copper-brazed stainless steel plate exchanger	"VE" version with 100% stainless steel exchanger
Chlorine (CL-)	< 250 mg/l at 50°C < 100 mg/l at 75°C < 10 mg/l at 90°C	< 250 mg/l at 50°C < 100 mg/l at 75°C < 10 mg/l at 90°C
Sulphates (SO₄ 2-)	< 100 mg/l	< 400 mg/l
Nitrates (NO₃-)	< 100 mg/l	no limit
pH	7.5 - 9.0	6.0 - 10.0
Electrical conductivity	10-500 μS	no limit
Hydrogencarbonate (HCO₃-)	70-300 mg/l	no limit
HCO₃-/SO₄2- ratio	> 1	no limit
Ammonium ion (NH₄+) 	< 2 mg/l	no limit
Free chlorine	< 0.5 mg/l	< 0.5 mg/l
Sulphites	< 1 mg/l	< 7 mg/l
Ammonia	< 2 mg/l	< 2 mg/l
Hydrosulfuric acid (H₂S)	< 0.05 mg/l	no limit
Carbon dioxide (CO₂)	< 5 mg/l	no limit
Iron (Fe)	< 0.2 mg/l	no limit
SI saturation index	-0.4	no limit
Manganese (Mn)	< 0.05 mg/l	no limit
Hardness	7-24 °F	7-24 °F
Ratio [Ca²⁺, Mg²⁺]/[HCO₃]	< 0.5	< 0.5
Total organic carbon	< 30 mg/l	no limit

Also bear in mind that the domestic water module use frequency and intensity influence the corrosion phenomena. **For systems with intensive use, the VE version is always recommended.**

SAN-F30 T AND SAN-F30 T VE DOMESTIC WATER MODULE



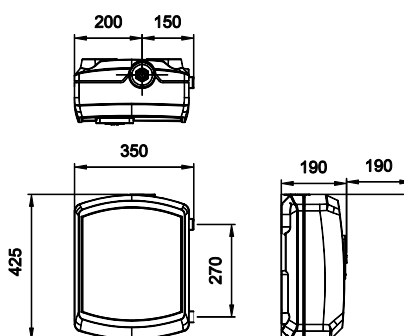
Module ideal for small users great sturdiness and simplicity



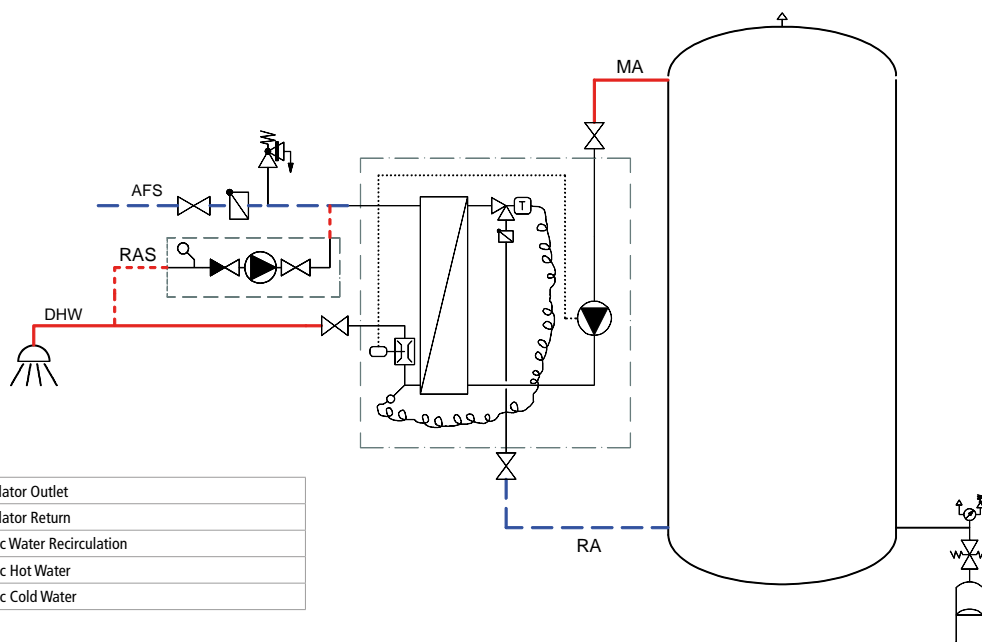
Instantaneous domestic hot water production module controlled through the integration of a thermostatic valve that manages the circulation pump to determine the domestic hot water temperature setting.

- Stainless steel tube circuit
- Stainless steel thermal probe inserted directly in the hot water circuit
- Nominal hot water temperature
- Adjustable thermostat head - from 35 to 65 °C.
- Premounted and prewired for quick and simple connection
- System activation through flow switch
- Optional stop valve set
- Optional connection tubes to the accumulation tank

SIZE AND DIMENSIONS



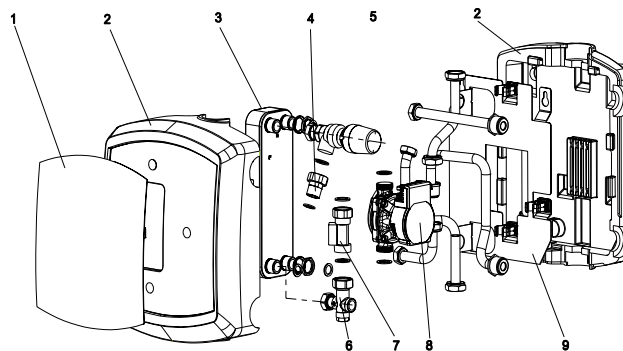
HYDRAULIC DIAGRAM



LEGEND

MA	Accumulator Outlet
RA	Accumulator Return
RAS	Domestic Water Recirculation
ACS	Domestic Hot Water
AFS	Domestic Cold Water

1	Protective tarp
2	Thermal insulation plates
3	Plate heat exchanger
4	Screw connection with built-in gravity braking
5	Thermostat head with stainless steel spiral probe
6	Angle regulation valve kvs=5.2
7	Flow switch
8	Circulation pump
9	Base plate



TECHNICAL FEATURES

Puffer circuit couplings	DN 20
Domestic water couplings	DN 20
Nominal exchange power (10-45 °C, puffer 65 °C)	62 kW
DHW nominal potential (10-45 °C, puffer 65 °C)+	24.6 l/min
Exchanger	Wilo Para 15/7 SC
Puffer circuit max operating pressure	3 bar
Domestic water max operating pressure	10 bar
Puffer circuit max operating temperature	95 °C
Domestic water max operating temperature	70 °C
Load loss at the DHW nominal capacity	0.6 bar
Dimensions HxLxW	335x422x186 mm

EXTRACTION VOLUMES UP TO 36 L/MIN, ACCUMULATION TANK TEMPERATURE FROM 50°C TO 80°C

COLD WATER INLET 10°C				
PUFFER CIRCUIT CAPACITY 1,100 L/H				
PUFFER T [°C]	HOT WATER T	CAPACITY [L/MIN]	T RETURN TO PUFFER [°C]	POWER EXCHANGED [KW]
75	60	18.6	22.8	65
	55	21.9	19.6	69
	50	25.8	17.2	72
	45	30.3	15.6	74
70	60	16.3	24.3	57
	55	19.4	21.1	61
	50	23.3	17.9	65
	45	27.5	16.3	67
65	55	16.8	22.7	53
	50	20.4	19.5	57
	45	24.6	17.1	60
60	50	17.5	20.9	49
	45	21.7	17.8	53
55	45	14.3	22.3	35
	40	18.4	19.2	45

COD	DESCRIPTION	CONTROL UNIT
1042112730	SAN F30 T domestic water module	Included
1042112731	SAN F30 T VE domestic water module	Included

SAN-F30 AND SAN-F30 VE DOMESTIC WATER MODULE



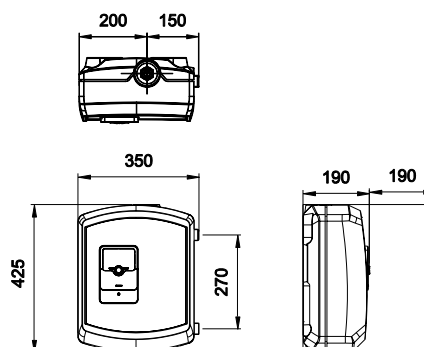
Ideal module for all types of consumption great efficiency and flexibility



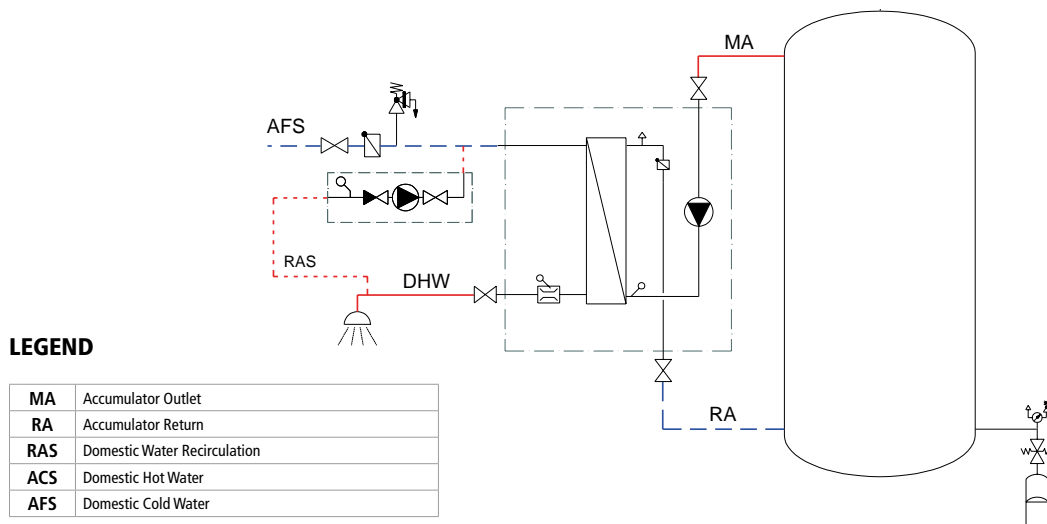
Electronically controlled instantaneous domestic hot water production module with various options, programmes for the circulation pump, and functions for cascading installation for a maximum of 4 modules. **The electronic control always ensure the minimum return temperature to the accumulator, guaranteeing optimal use of the renewable energy provided by the sun and a heat pump.**

- Complete stainless steel tubing
- insulation optimised according to EnEV 2014
- Variants available with full PWT in stainless steel
- comfort function (hot start)
- variable hot water temperature function

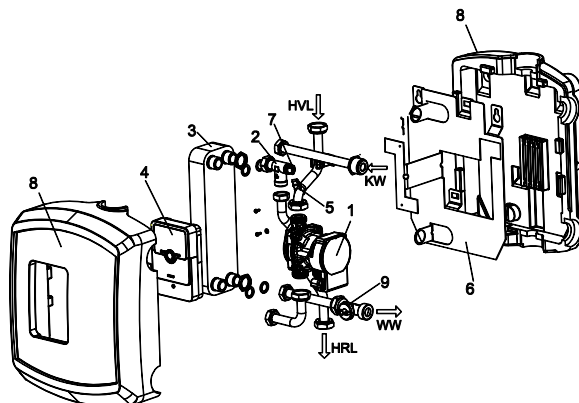
DIMENSIONS



HYDRAULIC DIAGRAM

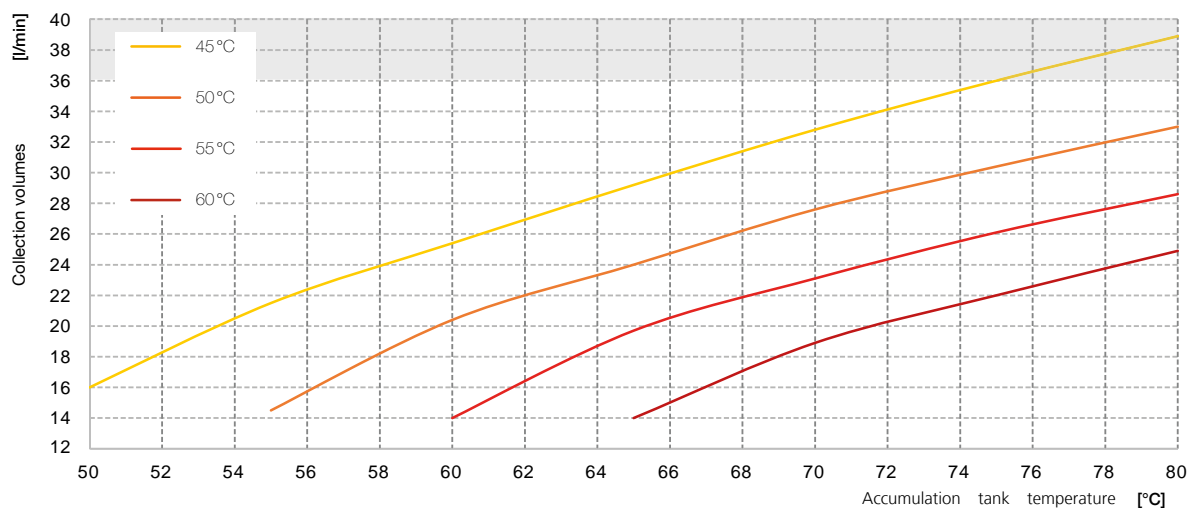


1	Wilo PARA 15/7 iPWM2
2	Heating return with check valve included
3	Copper-brazed plate heat exchanger Stainless steel plate heat exchanger
4	Regulation device (depending on the model)
5	Pt 1000 outlet buffer
6	Base plate
7	Manual venting valve
8	Thermo-insulating casing
9	Huba Sensor Type 235 2-40 l/min



TECHNICAL DATA	
Puffer circuit couplings	DN 20
Domestic water couplings	DN 20
Nominal exchange power (10-45 °C, puffer 65 °C)	70 kW
DHW nominal potential (10-45 °C, puffer 65 °C)+	28.7 l/min
Exchanger	Wilo Para 15/7 SC
Puffer circuit max operating pressure	3 bar
Domestic water max operating pressure	10 bar
Puffer circuit max operating temperature	95 °C
Domestic water max operating temperature	70 °C
Load loss at the DHW nominal capacity	0.8 bar
Dimensions HxLxW	335x422x186 mm

SAN F30 collection volumes up to 36 l / min, Accumulation tank temperature from 50°C to 80°C



COD	DESCRIPTION	CONTROL UNIT
1042113530	SAN F30 domestic water module	Included
1042113531	SAN F30 VE domestic water module	Included

SAN-F40 AND SAN-F40 VE DOMESTIC WATER MODULE



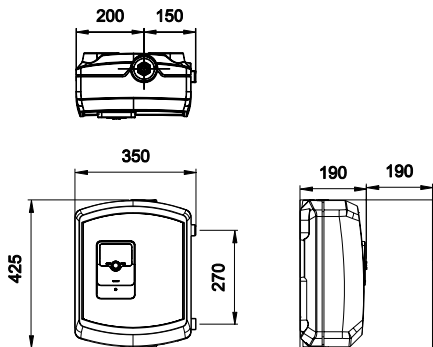
Ideal module for all types
 of consumption
 great efficiency and flexibility



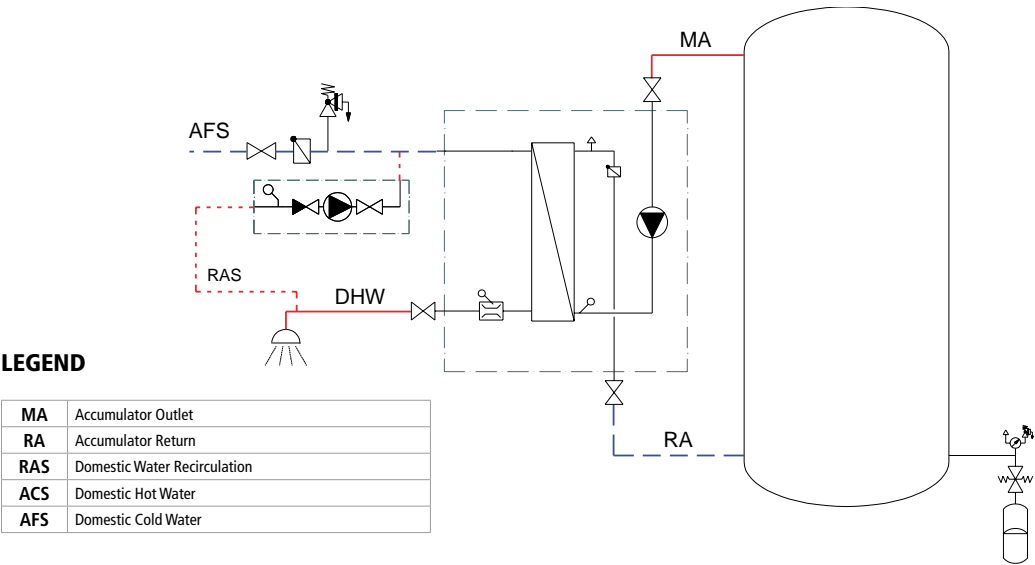
Electronically controlled instantaneous domestic hot water production module with various options, programmes for the circulation pump, and functions for cascading installation for a maximum of 4 modules. **The electronic control always ensure the minimum return temperature to the accumulator, guaranteeing optimal use of the renewable energy provided by the sun and a heat pump.**

- Complete stainless steel tubing
- insulation optimised according to EnEV 2014
- Variants available with full PWT in stainless steel
- comfort function (hot start)
- variable hot water temperature function

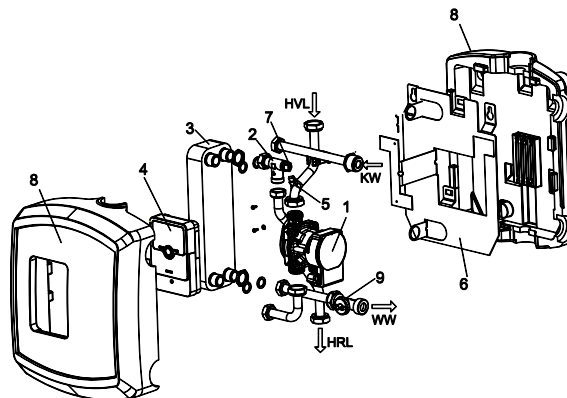
DIMENSIONS



HYDRAULIC DIAGRAM

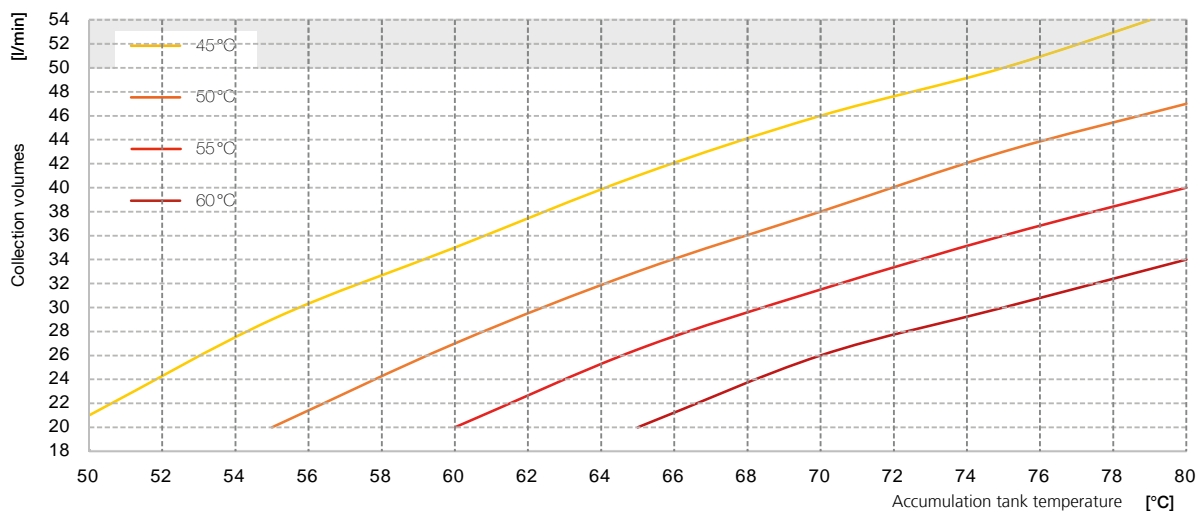


1	Wilo PARA 15/7 iPWM2
2	Heating return with check valve included
3	Copper-brazed plate heat exchanger Stainless steel plate heat exchanger
4	Regulation device (depending on the model)
5	Pt 1000 outlet buffer
6	Base plate
7	Manual venting valve
8	Thermo-insulating casing
9	Huba Sensor Type 235 2-40 l/min



TECHNICAL FEATURES	
Puffer circuit couplings	DN 25
Domestic water couplings	DN 25
Nominal exchange power (10-45 °C, puffer 65 °C)	100 kW
DHW nominal potential (10-45 °C, puffer 65 °C)+	41.0 l/min
Exchanger	Wilo Para 15/7 iPWM2
Puffer circuit max operating pressure	3 bar
Domestic water max operating pressure	10 bar
Puffer circuit max operating temperature	95 °C
Domestic water max operating temperature	70 °C
Load loss at the DHW nominal capacity	0.67 bar
Dimensions HxLxW	335x422x186 mm

SAN F40 collection volumes up to 50 l / min, Accumulation tank temperature from 50°C to 80°C



COD	DESCRIPTION	CONTROL UNIT
1042113030	SAN F40 domestic water module	Included
1042113031	SAN F40 VE domestic water module	Included

SAN-F65/ F65 VE DOMESTIC WATER MODULE SAN-F65 C/ F65 C VE



For high demands maximum efficiency



SAN F65 is based on cross-station logic for large systems. The best operational safety with maximum temperature precision. All modules are connected in bidirectional use mode. Therefore, the entire system can be regulated through a single control panel and all important information is centralised. The electronic regulator can send an error message and is, therefore, suitable for the management system for the entire system.

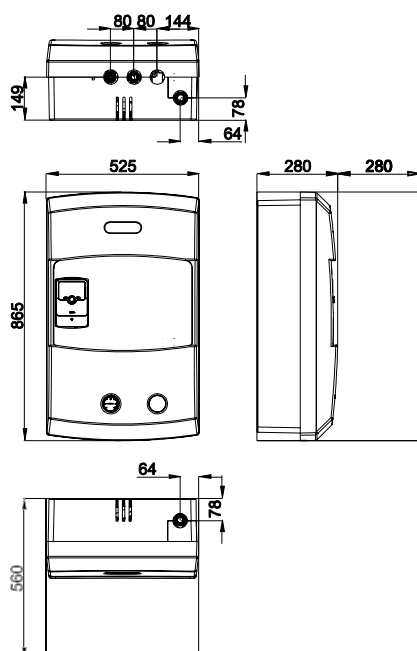
SAN F65 / F65 VE - Domestic hot water production module - single and with cascade connection.

- Compact modular construction
- Completely premounted for direct installation between the accumulation tank and the domestic water circuit
- With premounted and prewired electronic control
- Stop valves on all circuits
- Equipped with EPP insulation

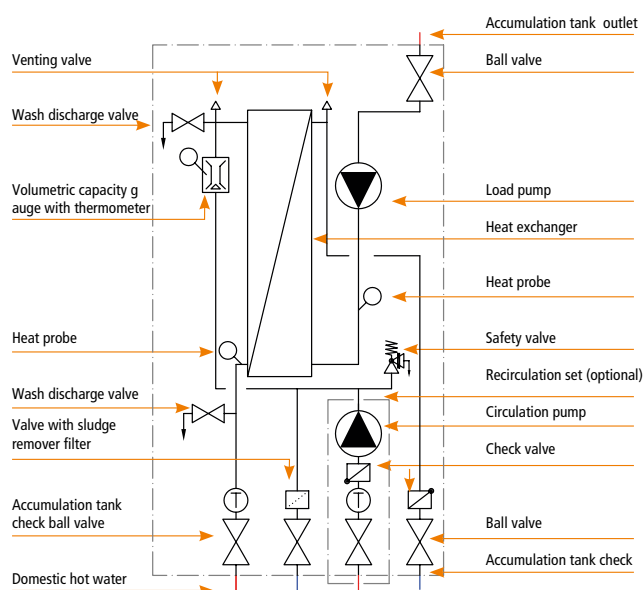
SAN F65 C/F65 C VE - Universal module with specific functions for cascade installations:

- Compact modular construction with valve for built-in preassembled cascade
- Thermal disinfection and sanitisation programme for extreme protection
- Completely premounted for connection to the accumulator circuit and domestic water circuit
- Equipped with regulator installed and prewired
- Comfort recirculation function to keep the tubing network on the primary side hot
- Sliding set point, reduction of hot water temperature setting if the temperature of the accumulator tank is insufficient.
- Circuit equipped with stop valves
- Equipped with EPP insulation

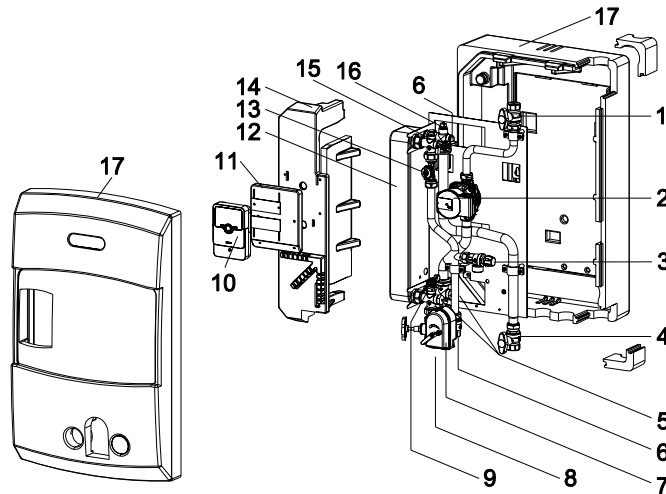
DIMENSIONS



HYDRAULIC DIAGRAMS



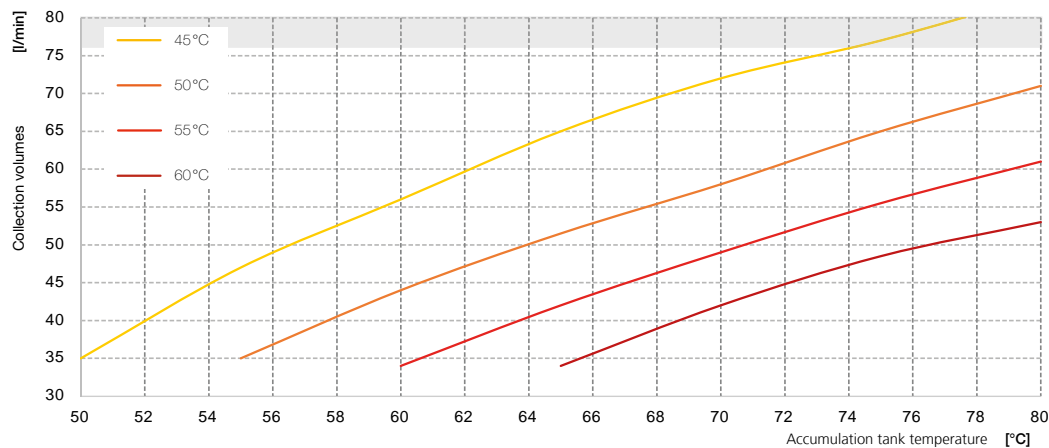
1	Heating outlet ball valve (MANDRISC)
2	Circulation pump
3	Safety valve
4	Heating return ball valve (RITRISC)
5	Front: CW 14 thermal probe Rear: immersion coupling for
6	Cold water (CW) shutoff valve
7	Hot water (HW) shutoff valve
8	Rinsing / Emptying tap (HW)
9	regulation device
10	Support for the regulation device
11	Insulating panel for plate heat exchanger
12	Plate heat exchanger
13	Flow sensor 3.5-50 l/min Type 235
14	Cold water (CW) rinsing tap
15	Through a backflow prevention device and manual venting valve
16	Mounting plate
17	Insulation
18	Circulation set (optional accessories)



TECHNICAL FEATURES

Puffer circuit couplings	DN 25
Domestic water couplings	DN 25
Nominal exchange power (10-45 °C, puffer 65 °C)	158 kW
DHW nominal potential (10-45 °C, puffer 65 °C)+	65 l/min
Exchanger	Wilo Para 15/8 iPWM2
Puffer circuit max operating pressure	3 bar
Domestic water max operating pressure	10 bar
Puffer circuit max operating temperature	95 °C
Domestic water max operating temperature	65 °C
Load loss at the DHW nominal capacity	0.4 bar
Dimensions HxLxW	865x525x280 mm

SAN F65 collection volumes up to 70 l / min, Accumulation tank temperature from 50°C to 80°C



COD	DESCRIPTION	CONTROL UNIT
1042214530	SAN F65 domestic water module	Included
1042214540	SAN F65 VE domestic water module	Included
1042214550	SAN F65 C domestic water module FOR FLUSH-MOUNT INSTALLATION	Included
1042214551	SAN F65 VE domestic water module	Included

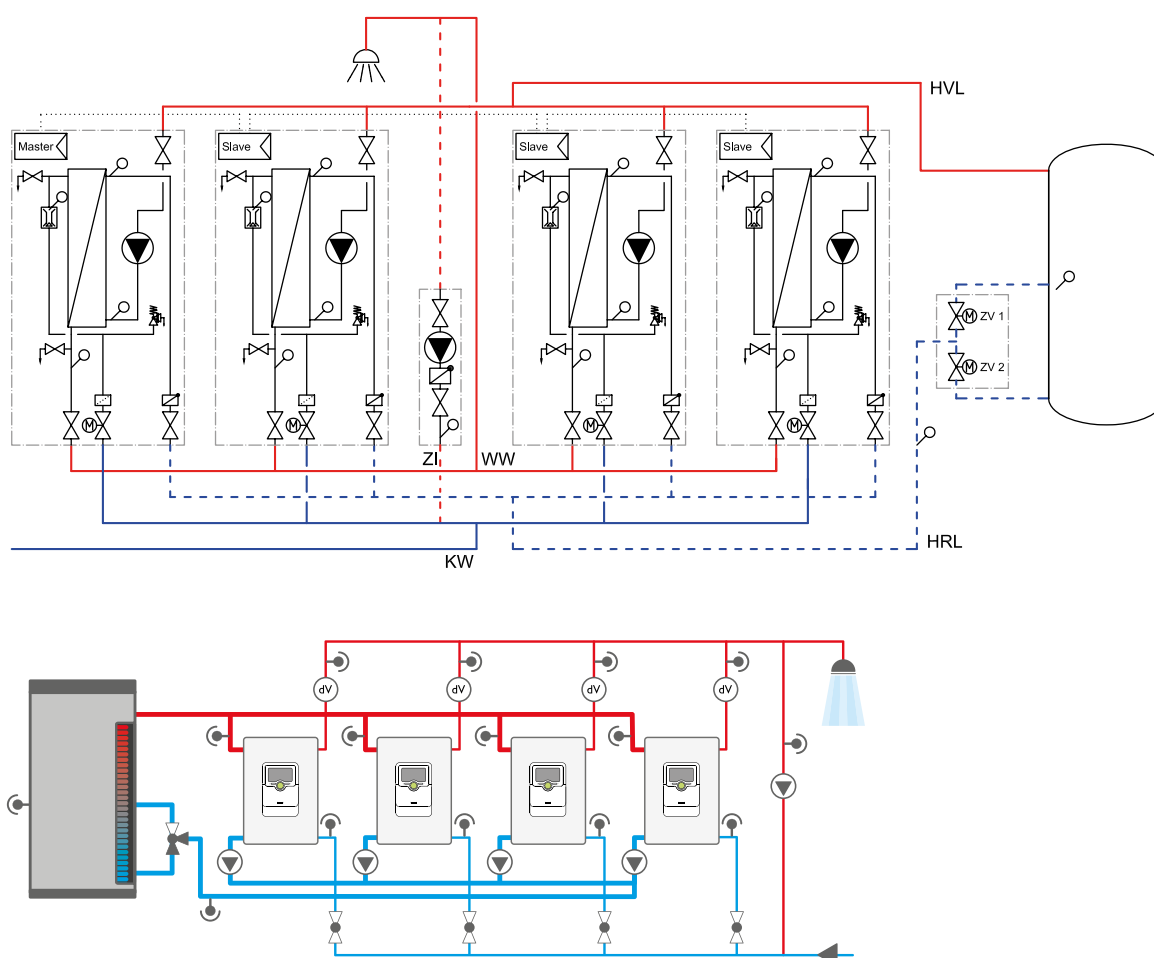
COMPOSITION OF CASCADING SYSTEMS

The cascading system offers the possibility of adding more modules. The modules are combined to achieve the required performance. The advantage compared to large hot water production systems is that more individual modules control the volumetric flow of the hot water more precisely. In any case, each module will be activated right after the extraction threshold increases.

Besides guaranteeing perfect control of the domestic hot water delivery temperature, the activation of the various cascading modules in sequence allows the lowest possible return temperature to the lower part of the accumulation tank. In other words, it allows optimal use of both the storage tank and its heat sources, an advantage that becomes particularly evident with solar thermal or heat pump or condensing boiler.

Last but not least, in the unlikely event that a module should fail, a system with several cascaded modules will be able to continue to operate with the remaining SAN modules, ensuring service continuity, albeit with temporarily reduced capacities.

Switching over the recirculation and return circuit with SAN F65



Composition of cascading systems. Versions with 100% stainless steel exchanger

The use of the VE versions with 100% stainless steel heat exchanger is recommended when the domestic water exceeds even only one of the following limits: Electrical conductivity 500 μ S or greater Hardness 25°F or greater (with softener) In any case, check the technical specifications for detailed water quality requirements.

MODEL	DESCRIPTION	CODES	CAPACITY (10-45°C, PUFFER 65°C)
SAN F30 VE C2	2 x SAN F30 VE modules	2x 1042113531	58 l/min
	2 x cascading valves set	2x 1052102530	
SAN F30 VE C3	3 x SAN F30 VE modules	3x 1042113531	87 l/min
	3 x cascading valves set	3x 1052102530	
SAN F30 VE C4	4 x SAN F30 VE modules	4x 1042113531	117 l/min
	4 x cascading valves set	4x 1052102530	
SAN F40 VE C2	2 x SAN F40 VE modules	2x 1042113031	81 l/min
	2 x cascading valves set	2x 1052102530	
SAN F40 VE C3	3 x SAN F40 VE modules	3x 1042113031	123 l/min
	3 x cascading valves set	3x 1052102530	
SAN F40 VE C4	4 x SAN F40 VE modules	4x 1042113031	163 l/min
	4 x cascading valves set	4x 1052102530	
SAN F65 VE C2	2 x SAN F65C VE modules	2x 1042214551	136 l/min
SAN F65 VE C3	3 x SAN F65C VE modules	3x 1042214551	203 l/min
SAN F65 VE C4	4 x SAN F65C VE modules	4x 1042214551	272 l/min
SAN F65 VE C5	5 x SAN F65C VE modules	5x 1042214551	339 l/min
SAN F65VE C6	6 x SAN F65C VE modules	6x 1042214551	407 l/min

Composition of cascading systems. Standard versions with copper-brazed stainless steel plate exchanger

If the domestic water exceeds even only one of the following limits, do not use the standard versions, use the VE versions with 100% stainless steel exchanger: Electrical conductivity 500 µS or greater Hardness 25°F or greater with softener In any case, check the technical specifications for detailed water quality requirements.

MODEL	DESCRIPTION	CODES		CAPACITY (10-45°C, PUFFER 65°C)
SAN F30 C2	2 x SAN F30 modules	2X	1042113530	58 l/min
	2 x cascading valves set	2X	1052102530	
SAN F30 C3	3 x SAN F30 modules	3X	1042113530	87 l/min
	3 x cascading valves set	3X	1052102530	
SAN F30 C4	4 x SAN F30 modules	4X	1042113530	117 l/min
	4 x SAN F30 modules	4X	1052102530	
SAN F40 C2	2 x SAN F40 modules	2X	1042113030	81 l/min
	2 x cascading valves set	2X	1052102530	
SAN F40 C3	3 x SAN F40 modules	3X	1042113030	123 l/min
	3 x SAN F30 modules	3X	1052102530	
SAN F40 C4	4 x SAN F40 modules	4X	1042113030	163 l/min
	4 x SAN F30 modules	4X	1052102530	
SAN F65 C2	2 x SAN F65C modules	2X	1042214550	136 l/min
SAN F65 C3	3 x SAN F65C modules	3X	1042214550	203 l/min
SAN F65 C4	4 x SAN F65C modules	4X	1042214550	272 l/min
SAN F65 C5	5 x SAN F65C modules	5X	1042214550	339 l/min
SAN F65 C6	6 x SAN F65C modules	6X	1042214550	407 l/min

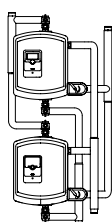
SET OF VALVES FOR CASCADING SAN F30/SAN F40



Set of valves for cascading made up of 2 elbow ball valves and 1 motorised 2-way valve. For cascading connection of the SAN F30 and SAN F40 modules (both VE and standard versions). 1 set of valves is required for each modules that makes up the cascading system.

COD	DESCRIPTION
1052102530	Set of valves for cascading SAN F30/SAN F40

CASCADING TUBE KIT SAN F30/SAN F40



Cascading tube kit for cascading hydraulic connection of 2 SAN F30 or SAN F40 modules (both VE and standard versions).

COD	DESCRIPTION
1044100012	Cascading tube kit SAN F30 or SAN F40

RECIRCULATION KIT SAN F30T (VE)/SAN F30 (VE)/SAN F40 (VE)/SAN F65C (VE)



Recirculation kit that includes the WILO exchanger for domestic water, shutoff valve, check valve, PT1000 temperature sensor and probe holder fitting. For installation outside the SAN F30T (VE), SAN F30 (VE), SAN F40 (VE) modules and for F65C (VE) cascading

Recirculation kit that includes the WILO exchanger for domestic water, shutoff valve, check valve, PT1000 temperature sensor and probe holder fitting. For installation inside modules SAN F65 VE and SAN F65.

COD	DESCRIPTION
1043102505	Recirculation kit SAN F30T (VE)/SAN F30 (VE) SAN F40 (VE)/SAN F65C (VE)
1043102515	Single SAN F65 (ve) RECIRCULATION KIT INSTALLATION INSIDE THE MODULE

CASCADING TUBE KIT SAN F60C



Hydraulic connecting pipes kit for 2 cascading SAN F65C modules

COD	DESCRIPTION
1044100002	Cascading tube kit SAN F65c

HEAT EXCHANGERS




HEAT EXCHANGERS

BRAZED EXCHANGERS FOR SOLAR SYSTEMS

Brazed exchangers for solar systems Copper-brazed AISI 316 stainless steel plates Suitable for the exchange of the solar circuit with technical water or mains water (domestic). 1" M couplings. Permitted operating pressure up to 30 bars. MAX permitted operating temperature 195 °C (150°C with insulation). All brazed exchangers are sized to exchange the nominal power in particularly harsh conditions, as follows:

Primary circuit (solar): Water and propylene glycol 50% 93==>78 °C

Secondary circuit: Water 70==> 84 °C

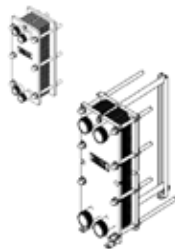
	CODE	DESCRIPTION	DIMENSIONS [MM]
	1051341311	Brazed exchangers, 13 kW, preinsulated up to 20 m2 collectors	175X346X105
	1051343211	Brazed exchangers, 32 kW, preinsulated up to 50 m2 collectors	175X346X135
	1051345211	Brazed exchangers, 52 kW, preinsulated up to 80 m2 collectors	175X346X179
	1051347810	Brazed exchangers, 78 kW up to 120 m2 collectors	125X334X124
	1051341710	Brazed exchangers, 117 kW up to 180 m2 collectors	125X334X170
	1051346210	Brazed exchangers, 162 kW up to 250 m2 collectors	125X334X239
	1051307810	Insulation for brazed exchanger, 78 kW	-
	1051301710	Insulation for brazed exchanger, 117 kW	-
	1051306210	Insulation for brazed exchanger, 162 kW	-

EXCHANGER WITH PLATES AND GASKETS FOR SOLAR POOL HEATING SYSTEMS

Heat exchangers for solar pool heating systems. AISI 316 stainless steel plates with EPDM UniLock gaskets and galvanised carbon steel frame. 1" 1/4 M AISI 304 stainless steel couplings The use of EPDM gaskets ensures excellent compatibility with the chemical substances commonly used for treating pool water. Permitted operating pressure up to 10 bars. MAX permitted operating temperature 100 °C. Versions with titanium plates are available upon request and are suitable for use with salt water. All brazed exchangers are sized to exchange the nominal power in particularly harsh conditions, as follows:

Primary circuit (solar): Water and propylene glycol 50% 55==>50 °C

Secondary circuit: Pool water 28°C

	CODE	DESCRIPTION	DIMENSIONS [MM]
	1051331310	Exchanger for pool, 13 kW, up to 20 m2 collector	470X200X220
	1051333210	Exchanger for pool, 32 kW, up to 50 m2 collector	470X200X220
	1051335210	Exchanger for pool, 52 kW, up to 80 m2 collector	470X200X220
	1051337810	Exchanger for pool, 78 kW, up to 120 m2 collector	470X200X330
	1051331710	Exchanger for pool, 117 kW, up to 180 m2 collector	470X200X330
	1051336210	Exchanger for pool, 162 kW, up to 250 m2 collector	730X310X630
	1051301320	Insulation for exchanger for pool, 13 kW	-
	1051303220	Insulation for exchanger for pool, 32 kW	-
	1051305220	Insulation for exchanger for pool, 52 kW	-
	1051307820	Insulation for exchanger for pool, 78 kW	-
	1051301720	Insulation for exchanger for pool, 117 kW	-
116	1051306220	Insulation for exchanger for pool, 162 kW	-

WILO STRATOS Z 50/1-9.

Wet rotor circulation pump with flanged coupling, EC motor, and automatic performance adjustment.

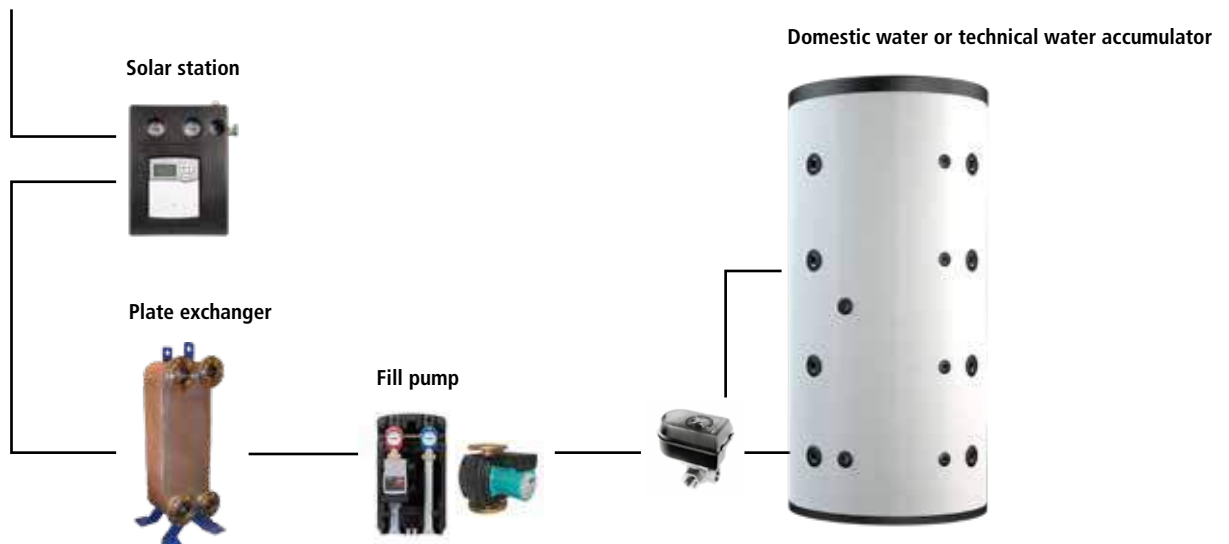
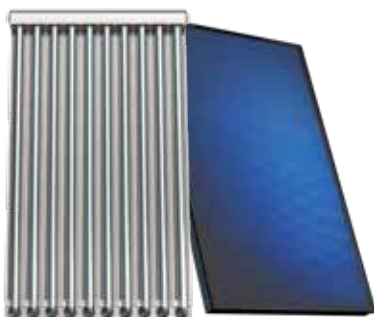


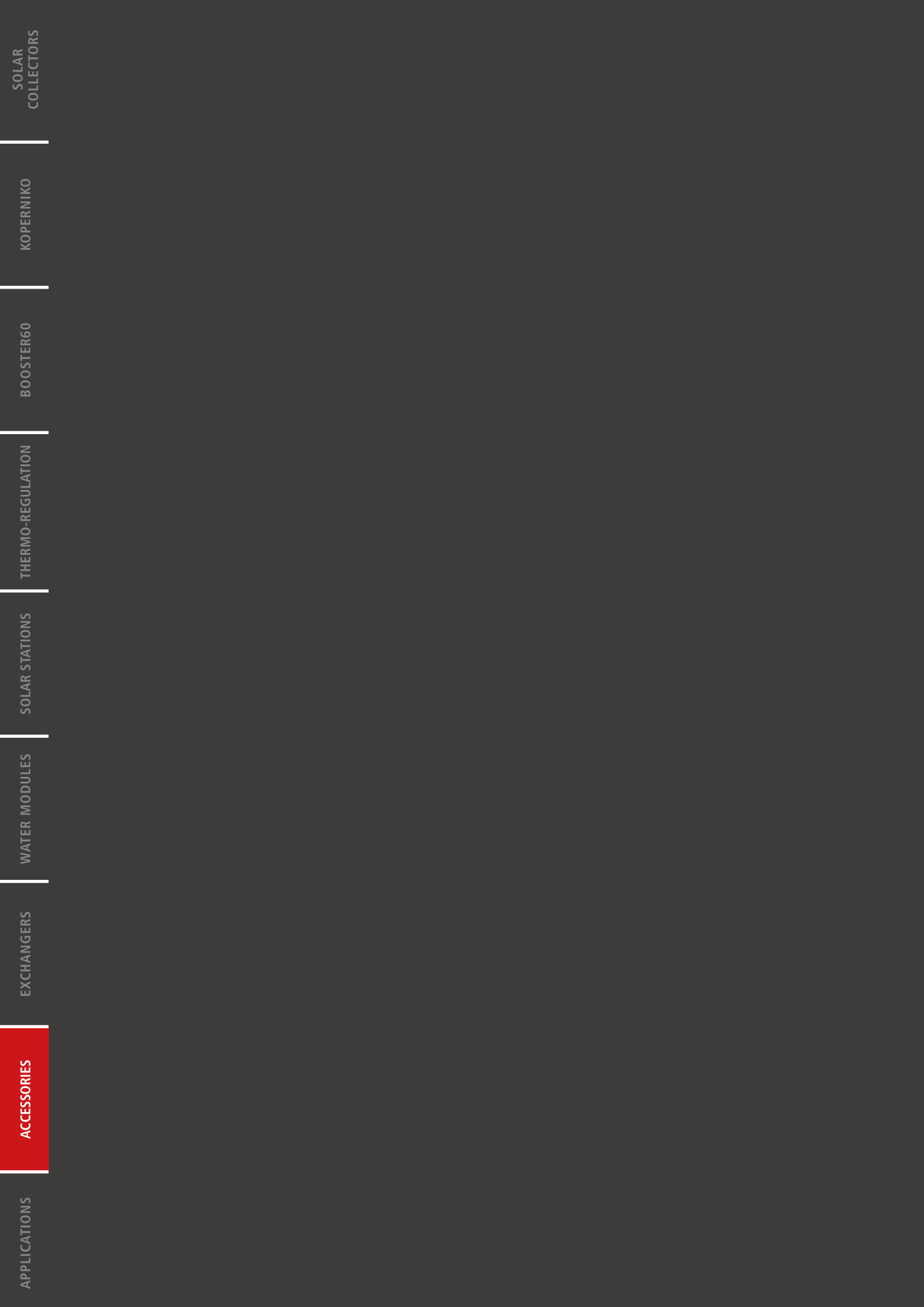
TECHNICAL FEATURES	
EEl Energy efficiency index	≤0.20
Maximum head	10 m
Maximum capacity	27 m³/h
Temperature	0 °C (ambient) - 80 °C (work)
Maximum pressure	16 bar
Protection rating	IP X4D

COD	DESCRIPTION
1050212518	Wilo TOP-Z 25/10 pump
1050213018	Wilo STRATOS PARA Z 30/1-8 pump
1050215019	Wilo TOP-Z 50/7 pump

APPLICATION EXAMPLE

Flat or evacuated solar collectors





APPLICATIONS

ACCESSORIES

EXCHANGERS

WATER MODULES

SOLAR STATIONS

THERMO-REGULATION

BOOSTER60

KOPERNIKO

SOLAR
COLLECTORS

PLEION

The Solar that warms your LIFE!



ACCESSORIES

SOLAR THERMAL ACCESSORIES

SOLAR THERMOSTATIC MIXING VALVE ¾" 35/55°C.



Adjustable, high performance thermostatic mixer for domestic water systems, suitable for solar systems, with anti-scald safety. Complete with threaded couplings, 1" M valve with 1" F x ¾" M couplings
Maximum operating pressure/temperature 10 bar/100°C.

COD	DESCRIPTION
1030900002	Thermostatic mixing valve ¾"-35/55°C-kvs=1.7

SOLAR THERMOSTATIC MIXING VALVE 1" 30-65°C



Thermostatic mixing valve for domestic water systems adjustable and suitable combined with solar systems. 1" threaded male couplings
Maximum operating pressure/temperature 14 bar/100°C.

COD	DESCRIPTION
1030900013	Thermostatic mixing valve 1"-30/65°C-kvs=2.6

THERMOSTATIC DEVIATOR-MIXING VALVE



Valve made up of a single body in brass alloy and selector in plastic, one part a 48°C (+/-1°C) not adjustable thermostatic fixed-point diverter and a second part an 30-56°C (±1°C) adjustable thermostatic mixer with anti-scald safety.

OPERATION

The inlet water at temperature "T" can take two different paths.

1) If the T<48°C, the water coming into the valve from the solar system enters in the deviator part and is passed into the water heater, then returning to the mixing side with cold water to reach the temperature required by the user.

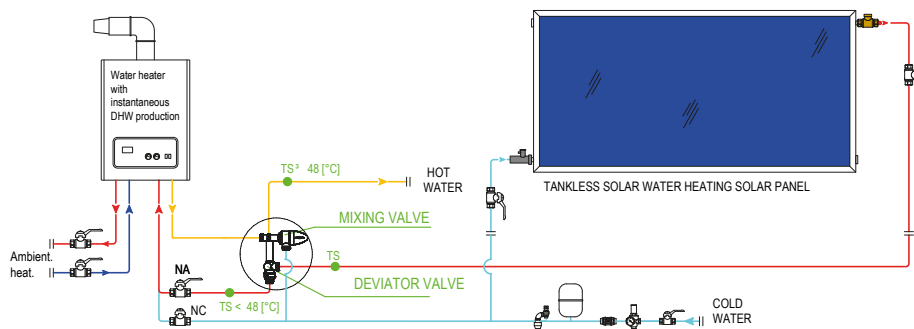
2) If the T>48°C, the water coming into the valve is sent directly to the mixer to reach the temperature required with the cold water, by-passing the accumulator or supporting energy source.

MIXING VALVE TECHNICAL DATA

Maximum operating temperature	100 °C
Fixed temperature calibration 48°C	+/-1 °C
kvs	1.8
Couplings	½"M

DEVIATING VALVE TECHNICAL DATA

Maximum operating pressure	10 bar
Minimum operating pressure	0.5 bar
Regulation interval	30-56 °C (+/-1 °C)
Load loss at 1000 l/h	0.35 bar
Kvs	2.1
Couplings	½"M



COD	DESCRIPTION
1030900991	5-way Selector-Mixing valve

NR20 PLUS SOLAR VALVE



NR20 Plus solar valve. T fitting made up of a ball valve with built-in check valve and tap for filling and discharging the system.

COD	DESCRIPTION
1057103400	NR20 Plus solar valve

SYSTEM FILL - DISCHARGE UNIT



In a single body, the solar circuit can be filled thanks to the shut-off valve in the centre of the valve body. Complete with closing cap in the fill-discharge tap section. Maximum temperature 120°C, maximum pressure 6 bars. Couplings: DN20, G1 AG - G1

COD	DESCRIPTION
1058101000	Solar system fill - discharge valve

NR20 SOLAR VALVE



Check valve 20 mbars, to be used as an additional resistor to the one already in the solar station. To be used with solar stations characterized by a high hydrostatic level. Connections: DN20, G3/4 IG, suitable for mounting directly on M13-7 and B13-7 solar stations.

COD	DESCRIPTION
1059103420	NR20 solar valve

AUTOMATIC SOLAR VENTING VALVE



Automatic high precision venting valve for solar systems due to its particular internal shape. Maximum temperature 160°C and pressure 10 bars. To be used in combination with the shutoff valve. G3/8 or G1/2 connections.

COD	DESCRIPTION
1055113800	Automatic solar venting valve G3/8
1055111200	Automatic solar venting valve G1/2

BRASS COMPRESSION FITTING



PTFE 3/4" sealing compression fitting with copper hub and nut for copper pipes DN15-18-22.

COD	DESCRIPTION
1061102315	PTFE 3/4" sealing compression fitting for copper DN15
1061102318	PTFE 3/4" sealing compression fitting for copper DN18
1061102322	PTFE 3/4" sealing compression fitting for copper DN22

SOLAR THERMAL ACCESSORIES

3D DEVIATOR VALVE



3-way deviator valve completely in special brass and including servomotor with 3-point control. Also for use for filling solar accumulators. Can be used manually when there is no power and equipped with 4 0.5mm² connection cables. Rotation angle and duration 18s/90°.

TECHNICAL FEATURES

Maximum operating temperature	110 °C
Maximum operating pressure	6 bar
Maximum differential pressure:	0.4 bar
Power supply	230V-50/60Hz
Protection rating	IP44

COD	DESCRIPTION
1052102520	3D-25 deviator valve
1052103220	3D-32 deviator valve

2D DEVIATOR VALVE



Deviator valve with servomotor, 230Vac/50-60Hz for managing the return to the thermal flywheel, being able to layer based on the temperature coming out of the domestic water module. Also for use for filling solar accumulators. Can be used manually when there is no power and equipped with 4 0.5mm² connection cables. Rotation angle and duration 30s/90°.

TECHNICAL FEATURES

Maximum operating temperature	110 °C
Maximum operating pressure	6 bar
Maximum differential pressure	0.4 bar
Power supply	230V-50/60Hz
Protection rating	IP44

COD	DESCRIPTION
1052102510	2D-DN25-kvs=123 deviator valve
1052103210	2D-DN32-kvs=123 deviator valve

H-AIR AIR SEPARATOR FOR HORIZONTAL INSTALLATION



The H-AIR air separator is used to continuously eliminate air from the solar circuits. Equipped with PALL rings. We recommend installation horizontally, after the solar panel. The ecological insulating jacket has a very low weight and prevents unwanted heat loss, effectively and rationally contributing to energy savings. For safety reasons, it must be manually purged periodically using the key attached to the chain (included) to regulate the opening and closing of the venting valve.

TECHNICAL FEATURES

Max Operating Temp.	200 °C		
Min Operating Temp.	-10 °C		
Max operating press.	10 bar		
Max glycol percentage	50%		
Max flow speed	1.5 m/s		
Dimensions [mm] LXWXH (Fit.) Weight [kg]	102x113x188	22 3/4"	1.4
	110x117x207	1"	1.8
	116x121x227	1 1/4" 1 1/2"	2.4
	125x135x258	2"	2.6

COD	DESCRIPTION
1030903541	H-AIR 3/4" air separator
1030903521	H-AIR 1" air separator
1030902991	H-AIR 1 1/4" air separator
1030903011	H-AIR 1 1/2" air separator
1030903531	H-AIR 2" air separator

FLOW REGULATORS



The balancing valves allow convenient and precise regulation of the volumetric flows in the various parts of a centralised solar system, thus optimising the energy captured by each solar subfield, also visualising the capacity at any time, "the reading reference is the lower edge of the float body".

After calibration, the bypass is replaced with the closing set. Suitable for high pressures and temperatures characteristic of a solar system.

The balancing valve requires a straight inlet section with a nominal length and diameter equal to those of the system used. The valve may be mounted horizontally, obliquely, and vertically, however, the direction of the flow indicated by the arrow must be taken into consideration.

Maximum operating temperature-pressure 185°C-16 bars. Female threaded coupling

TECHNICAL FEATURES

Internal coupling	External coupling	Collector (l/min)	kvs	Dimensions (LxDxH)
3/4" F	DN20	2-12	2.2	129x46x79
3/4" F	DN20	8-30	5	129x46x79
1" F	DN25	10-40	5.1	152x58x82
1" F	DN32	10-70	17	161x65x84

COD	DESCRIPTION
1030902951	3/4" Flow regulator 2-12 l/min
1030903031	3/4" Flow regulator 8-30 l/min
1030903591	1" Flow regulator 10-40 l/min
1030907361	1" Flow regulator 10-70 l/min

ELECTRIC ANODE SOLAR



Electric anode with 1/2" connection (replaces the magnesium sacrificial anode) for boilers with a capacity of up to 2,000 litres.

COD	DESCRIPTION
1030907345	Electric anode up to 2,000 litres

EXPANSION VESSELS

ESOL SOLAR VESSEL



ESOL EXPANSION VESSELS are dedicated for use in forced circulation solar systems supplied by flat or evacuated collectors.

By its nature, a high performance forced circulation solar system is stressed by high variations of the temperature that, in some cases, can reach 200°C, with subsequent volume variations. For this reason, the expansion vessel must be carefully chosen to compensate for those variations as well as resist high temperatures. In fact, ESOL vessels have EPDM-HT membranes capable of resisting temperatures up to **140°C** with glycolated fluid. The ESOL series can also be combined with the DISOL dissipator vessel to cool the fluid, thus protecting the membrane.

The vessels are distinguished by the **ability to change the membrane in the event of a failure**, hydraulic coupling made on the galvanised counterflange and with **replaceable nylon diffuser**, painted in RAL9010.

TECHNICAL FEATURES

Model	Height [mm]	Diameter [mm]	Maximum operating pressure [bar]	Standard preload pressure [bars]	Coupling [inches]
ESOL8	316	200	10	2.5	¾"
ESOL12	295	280	10	2.5	¾"
ESOL18	456	280	10	2.5	¾"
ESOL24	483	280	10	2.5	¾"
ESOL35	450	365	10	2.5	¾"
ESOL50	565	365	10	2.5	¾"
ESOL80	717	415	10	2.5	1"
ESOL100	663	495	10	2.5	1"
ESOL150	795	550	10	2.5	1"
ESOL200	1085	600	10	2.5	1"
ESOL300	1212	650	10	2.5	1"

COD	DESCRIPTION
1030710108	ESOL 08 solar expansion vessel
1030710112	ESOL 12 solar expansion vessel
1030710118	ESOL 18 solar expansion vessel
1030710124	ESOL 24 solar expansion vessel
1030710135	ESOL 35 solar expansion vessel
1030710150	ESOL 50 solar expansion vessel
1030710180	ESOL 80 solar expansion vessel
1030710100	ESOL 100 solar expansion vessel
1030710015	ESOL 150 solar expansion vessel
1030710200	ESOL 200 solar expansion vessel
1030710300	ESOL 300 solar expansion vessel

DISOL SOLAR DISSIPATOR VESSEL



The solar dissipator or cooling vessel protects the ESOL solar expansion vessel membrane in the event of excessive overheating due to oversized solar systems or those equipped with solar stations installed near the solar collector and thus greater stressed from high temperatures.

To connect upstream from the ESOL expansion vessel thanks to two 3/4" couplings.

TECHNICAL FEATURES

Model	Height [mm]	Diameter [mm]	Pressure Maximum operating [bar]	Coupling [inches]
DISOL12	320	280	10	2x3/4"
DISOL18	435	280	10	2x3/4"
DISOL24	510	280	10	2x3/4"

COD	DESCRIPTION
1030711112	DISOL12 solar dissipator expansion vessel
1030711118	DISOL18 solar dissipator expansion vessel
1030711124	DISOL24 solar dissipator expansion vessel

ESAN DOMESTIC WATER VESSEL



The expansion vessel for domestic water systems with **interchangeable EPDM membrane**, for temperatures from -10÷100°C and pressures of 10 bars, external paint colour RAL 5015.

TECHNICAL FEATURES

Model	Height [mm]	Diameter [mm]	Maximum operating pressure [bar]	Standard preload pressure [bars]	Coupling [inches]
ESAN8	316	200	10	1.5	3/4"
ESAN12	295	280	10	1.5	3/4"
ESAN18	456	280	10	1.5	3/4"
ESAN24	483	280	10	1.5	3/4"
ESAN35	440	365	10	1.5	1"

COD	DESCRIPTION
1030712108	ESAN08 solar domestic water expansion vessel
1030712112	ESAN12 solar domestic water expansion vessel
1030712118	ESAN18 solar domestic water expansion vessel
1030712124	ESAN24 solar domestic water expansion vessel
1030712135	ESAN35 solar domestic water expansion vessel

EXPANSION VESSEL ACCESSORIES

WALL BRACKET



Wall bracket with extension, equipped with four anchors and screws for mounting and 3/4" male threaded coupling for direct connection to the 8 to 24 litre ESOL series.

COD	DESCRIPTION
1030910721	Wall bracket with 3/4" nipple

ESOL EXPANSION VESSEL CONNECTION KIT



Kit for the quick and efficient connection of the ESOL solar expansion vessel (up to 50 litres). The kit includes 1 m 3/4" flexible steel hose including swivels with flat stop gaskets on both sides, 3/4" manual shutoff fitting to be used for connection to the expansion vessel to allow the latter to be detached from the system for maintenance or other operations, vessel wall bracket.

COD	DESCRIPTION
1030903481	ESOL expansion vessel connection kit

VESSEL SHUTOFF FITTING



3/4" manual shutoff fitting to be used to connect the expansion vessel to allow it to be disconnect from the system if necessary for maintenance or other operations.

COD	DESCRIPTION
1030901061	3/4" solar shutoff fitting

ANTIFREEZE

THSOL -28 SOLAR FLUID



THSOL -28 SOLAR FLUID is particularly indicated for evacuated panel systems thanks to its greater resistance to high temperatures. It is a glycol-based product with a high boiling point and excellent resistance to deterioration at high temperatures. It supports high thermal loads with not reduction in its properties for long periods of time compared to monoethylene glycol and propylene glycol-based antifreeze products.

THSOL -28 is ready to use and does not need to be diluted with water. Dilution with water can reduce the product's anticorrosive and antifreeze properties. Concentrated THSOL -28 must be diluted in water at a percentage from 40% to 55%. The organic antioxidant additive keeps the circuit in perfect working condition for longer periods of time than conventional inorganic products. It protects the metal elements usually used in thermal systems.

The red colour helps detect leaks in the circuit. It contains no nitrites or amines, products that form nitrosamines, potential carcinogens. It also does not contain phosphates, which are banned due to their harmful effects on the environment. Product stable between -28°C and 190°C. Prolonged exposure at high temperatures (>200°C) could reduce the product's useful life.

COD	DESCRIPTION
1030812521	ThSol-28 pre-mixed antifreeze for evacuated systems 10l jug
1030812532	ThSol-28 pre-mixed antifreeze for evacuated systems 20l jug
1030812533	ThSol-28 concentrated antifreeze for evacuated systems 25l jug
1030812534	ThSol-28 concentrated antifreeze for evacuated systems 220l jug

CS-LTV SOLAR CLEANING LIQUID



CS-LTV Evacuated Solar Panel Cleaner is a green, slightly acidic fluid with a very mild odour. Thanks to its chemical structure, it can dissolve deteriorated heat transfer fluid deposits. For an optimal result, the overheated fluid must be removed from the solar thermal system as completely as possible. Diluting the product with water reduces its performance, therefore, it should be avoided. The product is ready to use; do not dilute. The collectors must be covered before starting the rinsing process to eliminate the deteriorated thermal fluid.

After filling the system, circulate the product for several hours at between 50 and 60°C. Higher temperatures must be avoided to prevent possible incompatibility problems with the gaskets. We recommend cleaning the system in sections, ensuring a good flow of water through the affected tubes. After finishing the cleaning process, the cleaning fluid must be drained from the system as completely as possible, then the system must be rinsed with water before filling it again with new anti-freeze.

CHEMICAL AND PHYSICAL CHARACTERISTICS

Appearance	Hot pink coloured liquid
Odour	Mild odour
Water solubility	Mixable
PH value of 100g/l at 20°C	8.5÷10
Self-ignition	Not self-igniting
Ignition temperature	245 °C

COD	DESCRIPTION
1030850015	CS-LTV solar cleaning liquid 5l jug
1030850110	CS-LTV solar cleaning liquid 10l jug

CHARGING STATION

Station for charging solar systems capable of ensuring proper charging and simple, quick and clean elimination of air from the tubes.

Equipped with a filter on the intake side, level indicator, ON/OFF switch, and transparent tube for filling the system so it can be visually checked during use.

TECHNICAL FEATURES

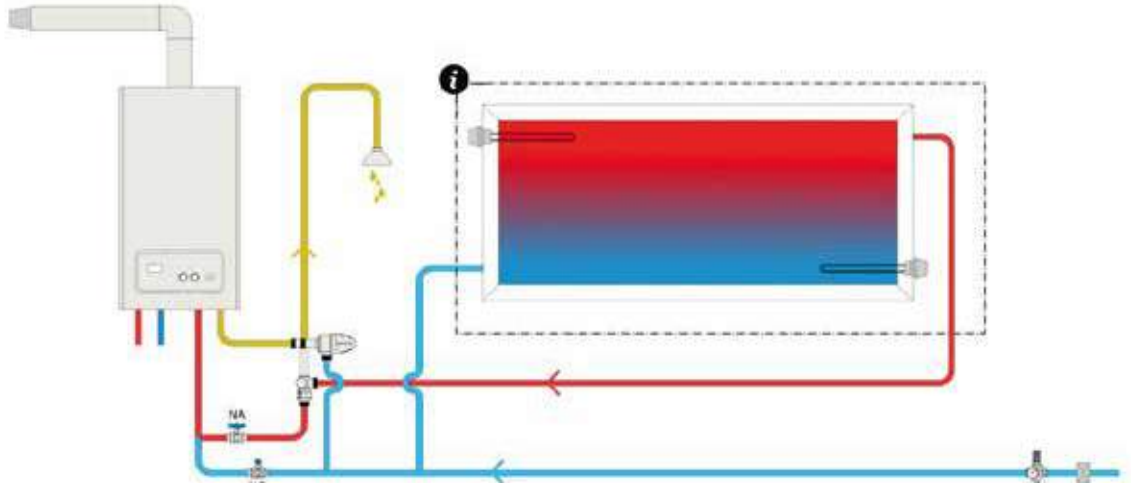
Capacity	5-47 l/min
Maximum head	52 m
Power supply	230 V
Operating fluid	Glycolated water-liquid detergents
Power supply cable	1.5 m
Ball valves	Filling and Discharge

COD	DESCRIPTION
1030900701	Charging station for systems

APPLICATIONS

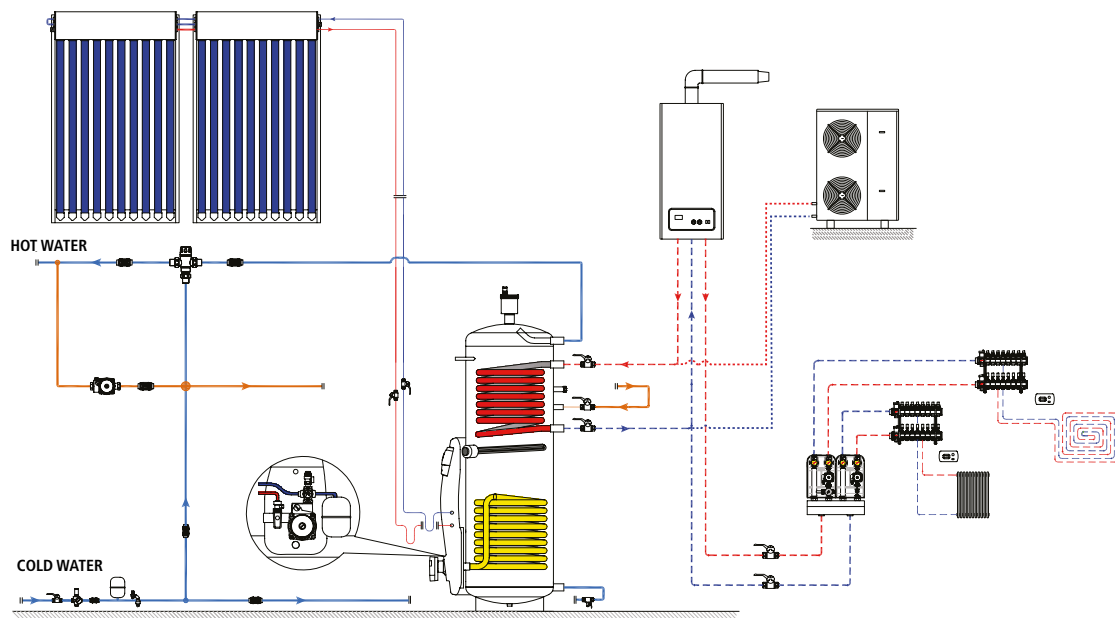
EGO

Tankless solar water heating collector with built-in accumulator including anti-freeze resistor and integration resistor, combined with a 5-way deviator-mixer valve.



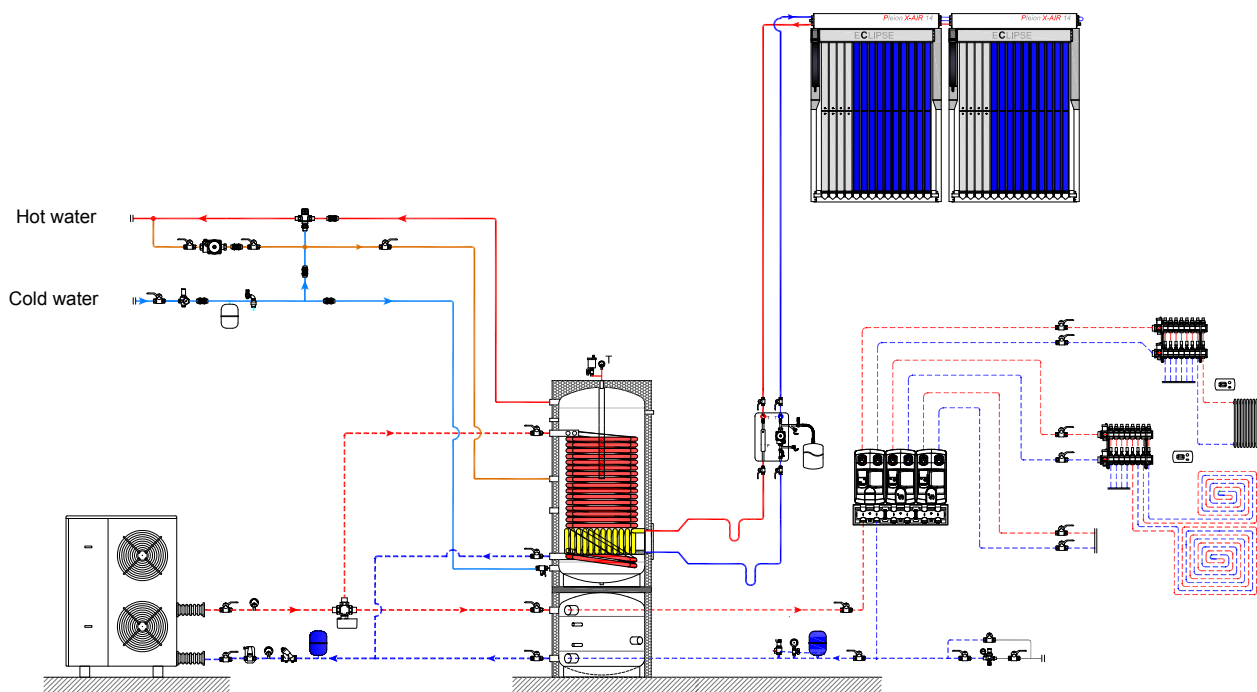
ECO COMPACT AND ECO COMPACT HPS

Solar collector with domestic water accumulator, ECO COMPACT - ECO COMPACT HPS double coil for water heater/heat pump.



BPU

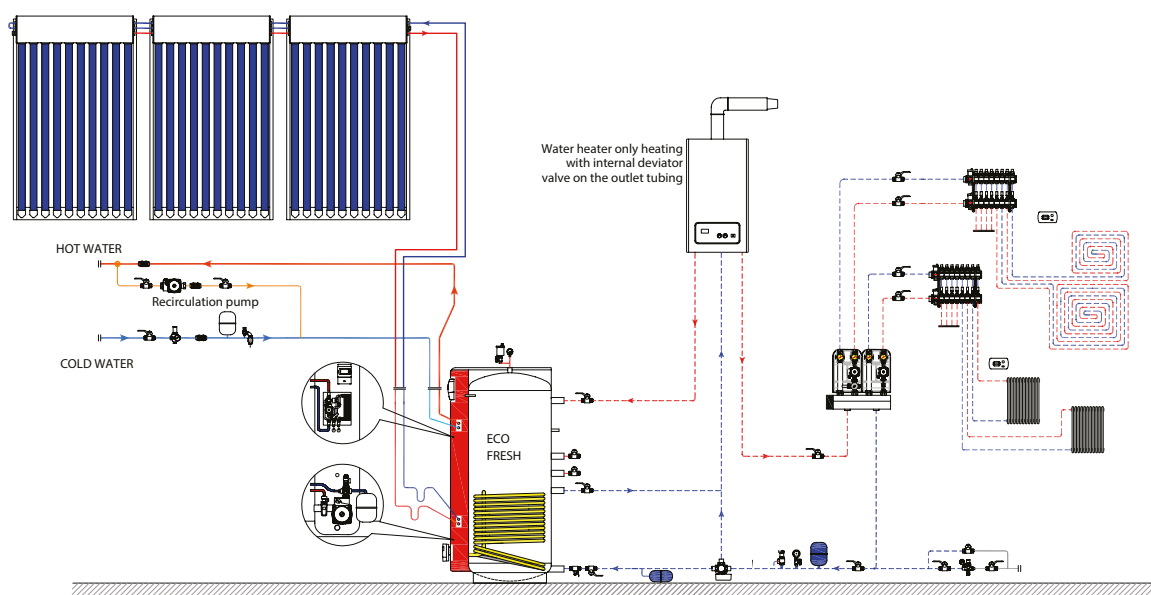
Solar collector with BPU accumulator for DHW and integration of the heating.



ECO FRESH

Solar collector with water heater, only heating, 3 tubes - technical water accumulator ECO FRESH 350 with external domestic water plate exchanger for instantaneous production and solar station built into the accumulator. Deviator valve located in the return of the heating system to raise the temperature in case of solar energy present in the accumulator during the winter phase.

INTROUCHMENT



START-UP SERVICE

The first start-up service is performed, by appointment, by a Pleion technical assistance centre (TAC).



WHAT DOES IT INVOLVE?

- Checking** of the hydraulic connections
- Checking** of the electrical wiring
- Loading** of the solar circuit, operation of the system parts

- Setting** of the control
- Pre-loading verification** of expansion vessel
- Verification** of proper operation of the organs of the plant



WHEN IS IT FREE?

The service is performed by **PLEION EXCLUSIVELY** for the following families of solar systems:



- ULTRAFRESH 401
- ULTRADUO 401



- ECO COMPACT
- ECO COMPACT HPS



- ECO FRESH



- ECO DUO



WHEN IS THE SERVICE CHARGED FOR??

- A. The service is **chargeable** for all systems **excluded** from the families indicated **above**.
- B. The service **can be purchased separately** (see table below) with the order of at least **one Pleion product** (e.g. solar control unit); it can therefore also be used where the system includes components of other brands.

CODICE	INTERVENTION	TARIFF UNSURPRISING	NOTE
AC01	Telephonic start-up of the solar control unit - NEW FOR 2023	40,00 €	Prior reservation at https://pleion.it/it/avienamento-centralina
AS05	Start-up of solar system up to 5 collectors	100,00 €	Including loading, venting and pressurising of the solar circuit
AS10	Start-up of solar system from 6 to 10 collectors	180,00 €	
AS20	Start-up of solar system from 11 to 20 collectors	300,00 €	
AS21	Additional collector starting from the 21st	12,00 €	
ASAN1	Single SAN module start-up	70,00 €	All SAN F Models
ASANC	Cascading SAN module system start-up	120,00 €	Regardless of the number of modules connected in cascade
AR01	Radiant system 1 collector	100,00 €	
AR02	Collectors radiant system after the first	75,00 €	

N.B. When starting the system, the presence of the electrical and hydraulic installer is highly recommended.

SOME EXAMPLES:

In the case of a system with 25 collectors, the offer will include:
no. 1 x AS20 Start-up of solar system from 11 to 20 collectors €300.00
no. 5 x AS21 Additional collector start-up from the 21st each €12.00, total €60.00

In the case of a radiant system with 3 collectors, the offer will include:
no.1 x AR01 Radiant system 1 collector €100.00
no.2 x AR02 Radiant collector systems after the first, each €75.00, total €150.00.

The first PLEION start-up service does not include the creation of hydraulic or electrical connections unless previously agreed with the reference PLEION personnel. PLEION will be responsible for verifying the correct functioning of its components present in the system; components such as heat generators, loading units and other elements, not supplied by PLEION, can still be verified on request as far as possible.

ACTIVATE THE ONLINE WARRANTY!



**Pleion offers free
to the consumer (buyer/user):
a 5-year Conventional Warranty.**

For activation, the user, within 15 days of the FIRST commissioning of the product, must visit www.pleion.it/it/garanzia and follow the instructions to understand the terms and methods of activation of the Conventional Warranty.

1. APPLICATION

The following General Sales Conditions apply to all Sales Contracts in force between the seller (hereinafter also referred to as Pleion Spa) and the purchaser (hereinafter also referred to as Customer). These conditions are considered to be fully accepted and approved by the Customer when the order is placed.

2. ORDERS

The descriptions, photographs, characteristics, and prices contained in the Pleion Spa catalogue and in other Pleion Spa documentation are for informational purposes only. Pleion Spa reserves the right to change all or part of the aforementioned information and the related products at any time and without prior notice. Customer orders will be considered definitively placed, subject to requests for changes or cancellations made by the Customer within 24 hours of being received by Pleion Spa.

3. PRICES

The sales prices are those indicated in the sales documentation, unless updated to those currently in force on the date of delivery. Prices are ex-office Pleion S.p.a. for products packaged according to standard internal procedures, are net of additional transport charges and other expenses related to the processing of the order and are exclusive of VAT.

4. DELIVERIES

The terms of delivery are indicative and in no case may constitute a motive for cancellation of all or part of the order placed by the Customer. In no case is Pleion Spa responsible for reimbursement of direct or indirect damages due to delivery delays or total or partial interruption of the supply.

5. TRANSPORT

If, at the time of delivery, the customer or person receiving the goods on their behalf discovers a defect or deficiency in the packaging or in the goods received, he or she must make a written notice on the shipper's transport slip and, at the same time, notify Pleion Spa in writing. Any damages or losses related to the transported goods are the Customer's responsibility as it is travelling at the Customer's risk, even if sold postage paid, unless otherwise agreed in writing.

6. CLAIMS

The Customer must submit any complaints to Pleion S.p.a. within eight days of the arrival of the goods. The customer, who has made complaints or brought disputes is under no circumstances entitled to delay or suspend payments for supplies to Pleion S.p.a.

Notwithstanding the provisions of article 134 of the Consumer Code, the non-consumer Buyer may exercise the right of recourse against the Seller, under penalty of forfeiture, only within two years of delivery of the Products to the same non-consumer Buyer.

Without prejudice to the rights provided for by consumer law, the Seller guarantees the quality of the Products for a certain period after delivery, excluding those defects that may occur due to transport, improper use or inadequate storage or maintenance of the Products. Any claim relating to defects or faults concerning the Products must be sent to the Seller by registered letter with return receipt or certified e-mail strictly within eight days of delivery in the case of obvious defects and within eight days of discovery in the case of hidden defects, in any case within 1 year of delivery, under penalty of forfeiture. Returns will not be accepted unless previously authorised in writing by the Seller; the latter will examine the returns to verify that the defect exists and is attributable to its own responsibility and only in this case will it replace and/or repair the Products recognised as defective. Any other warranty, even by law, must be considered excluded and replaced by these Terms and Conditions.

7. PAYMENT

All payments must be made, in the agreed currency, at the domicile of Pleion S.p.a. In the event of deferred payment, failure to comply with a deadline will result in forfeiture of the deadline itself, the immediate payability of the entire remaining amount and the application of default interests to the extent imposed by law. Payments are due within the agreed deadlines even in the event of delays in the delivery of the goods, total or partial failures and losses during the transportation and/or storage phases. This also applies when the Customer does not collect the goods made available to them by Pleion S.p.a.

8. RETENTION OF OWNERSHIP

The goods are sold subject to retention of ownership Italian Civil Code Art. 1523 et seq) and therefore remain the property of Pleion Spa until full payment of the price.

9. TERMINATION AND/OR SUSPENSION OF ORDERS

Pleion Spa has the right to suspend further deliveries in the event of the following:

- failure to comply in all or in part of even one of these sales conditions;
- change in the Customer's company and/or its commercial capabilities.

10. RESPONSIBILITY

Pleion Spa will not be responsible for damages or injuries to animals or people resulting from products being installed properly or contrary to the indications in the technical manuals/instructions provided to the Customer.

11. FORCE MAJEURE CLAUSE

The performance terms written in our offers/acceptances are not binding on Pleion Spa and are automatically suspended in the event of strikes, fires, floods, and other force majeure causes.

**12. NOTICE IN ACCORDANCE WITH ART. 13 OF ITALIAN LEGISLATIVE DECREE No. 196 OF 30 JUNE 2003
CODE FOR THE PROTECTION OF PERSONAL DATA**

12.1. The personal data collected by Pleion Spa may be processed either in written form or by electronic means for legal and contractual requirements, any future promotional initiatives, through sending electronic and/or paper communications as well as to carry out market research and surveys.

12.2. Personal data may be communicated to credit institutions, credit collection agencies, credit insurance companies, commercial information companies, consultants and professionals, our network of agents and external technical assistants, factoring companies, purchasing groups, and companies to which Pleion Spa has requested or will request the creation of the promotional initiatives and or market research and surveys mentioned above.

12.3. Pursuant to Art. 7 of Italian Legislative Decree no. 196 of 30 June 2003, the customer has the right to obtain the following at any time: the updating, rectification or, when interested, the integration of the data; the erasure, the transformation in anonymous form or the blocking of data processed in violation of the law, including data for which conservation is unnecessary with regards to the purposes for which the data has been collected or subsequently handled; confirmation that the operations referred to above have been brought to the attention, including with regard to their content, of those to whom data have been communicated or disclosed, except in cases where it is impossible to fulfil this obligation or where the obligation leads to the use of resources manifestly disproportionate to the right protected.

12.4. Pursuant to Art. 7 of Italian Legislative Decree no. 196 of 30 June 2003, you have the right to oppose the processing of your personal data, in whole or in part, even if pertinent to the purpose for collection.

12.5. The Data Controller is Pleion Spa, the Privacy Officer, Pleion Spa, and their representatives are authorised to become knowledgeable of the data.

13. ITALIAN LAW AND COURT OF JURISDICTION

These general sales conditions and subsequent future contractual and supply relationships are governed by Italian law. The Court of Verona has jurisdiction over any dispute related or connected to these general sales conditions and subsequent future contractual and supply relationships, with Pleion Spa having the right to start proceedings in the court in the buyer's jurisdiction.

The Buyer

Pleion spa

The Buyer declares to expressly approve, pursuant to art. 1341 and 1342 of the Italian Civil Code, the following vexatious clauses:
art. 6 complaints (time and form of the complaint – waiver of the recourse action) – art. 13 (Italian law and jurisdiction).

The Buyer



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